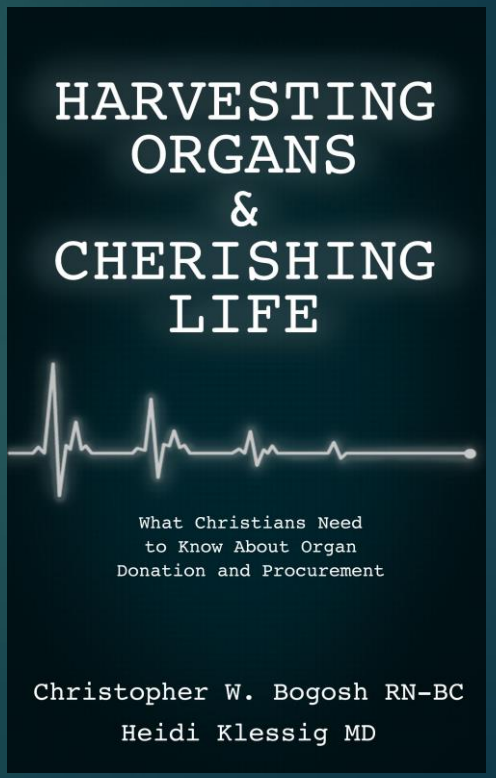
Dr. Heidi Klessig

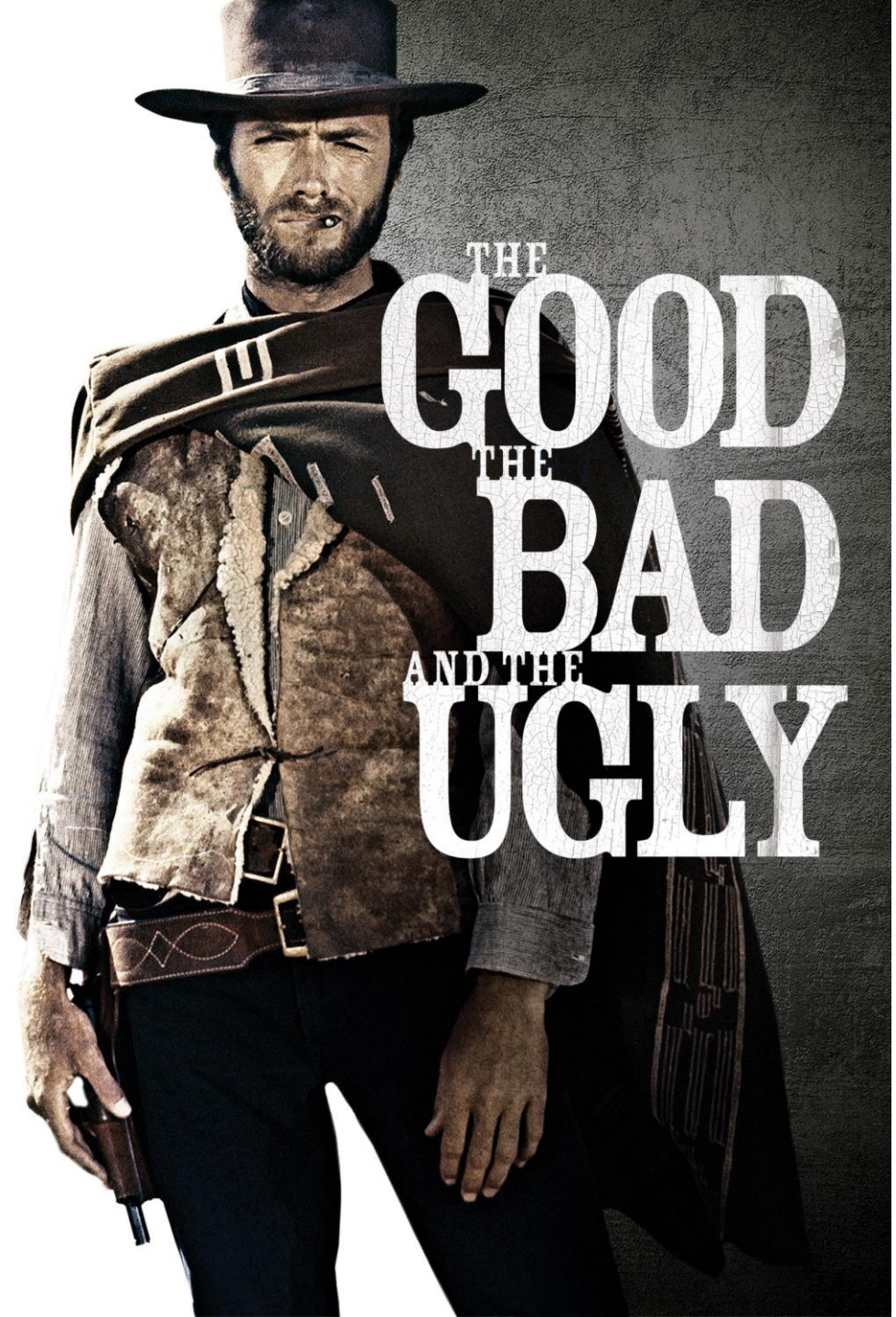
Retired Anesthesiologist &

Pain Management Specialist



Author: Harvesting Organs & Cherishing Life

Would I Receive a Transplant?



- Tissue Donation
- Living Donation
- Forced Organ Harvesting
- Organ Trafficking
- Donation after “Brain Death”
- Donation after Circulatory Death

Tissue Donation

Tissues are very simple structures and can be harvested from a biologically dead donor

- Corneas
- Skin
- Bones
- Heart valves

Los Angeles Times LOG IN

BUSINESS

In the rush to harvest body parts, death investigations have been upended

A body at the Pierce County medical examiner's office in Tacoma, Wash. (Christina House / Los Angeles Times)

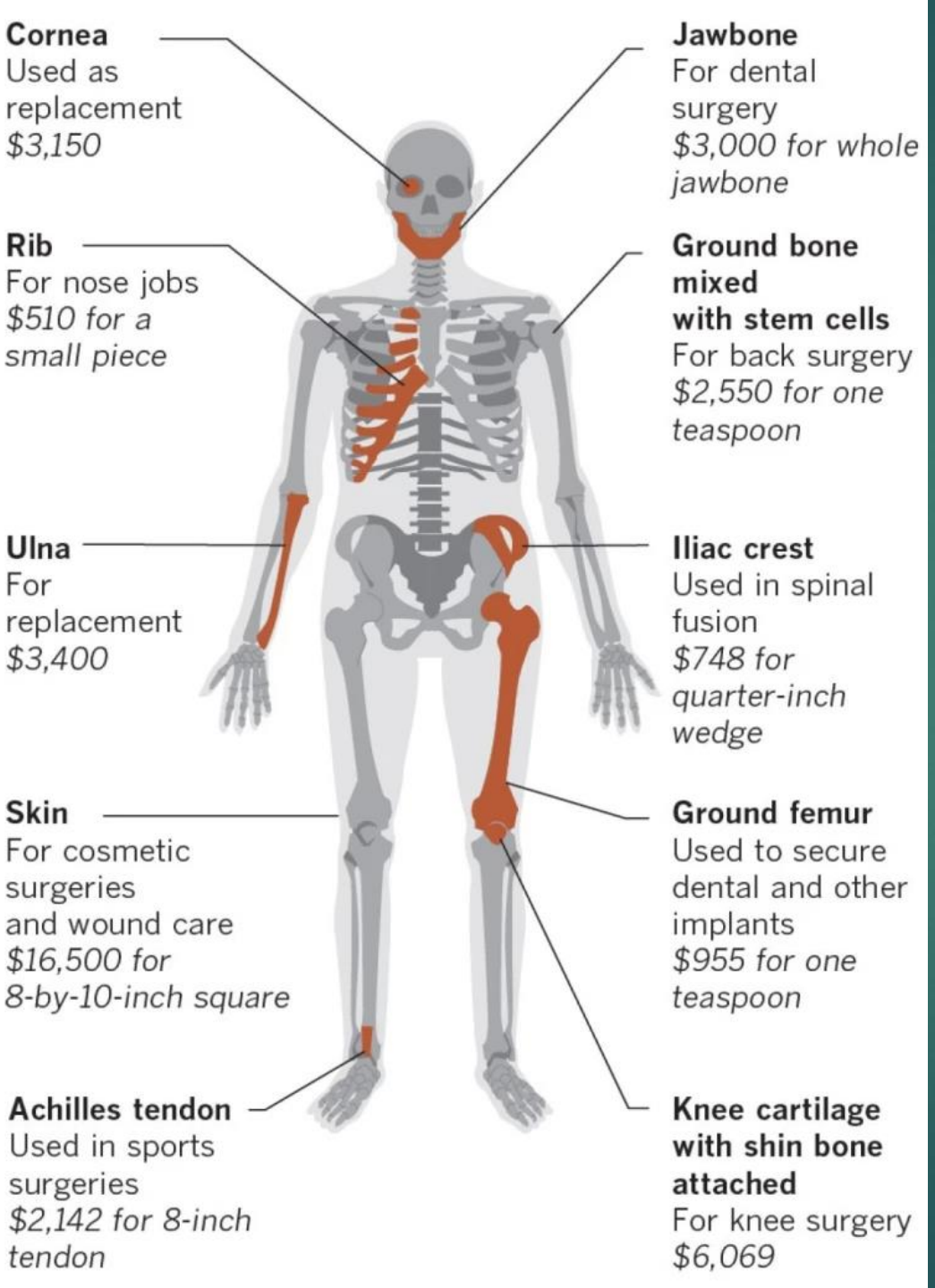
By MELODY PETERSEN | STAFF WRITER

OCT. 13, 2019 3 AM PT

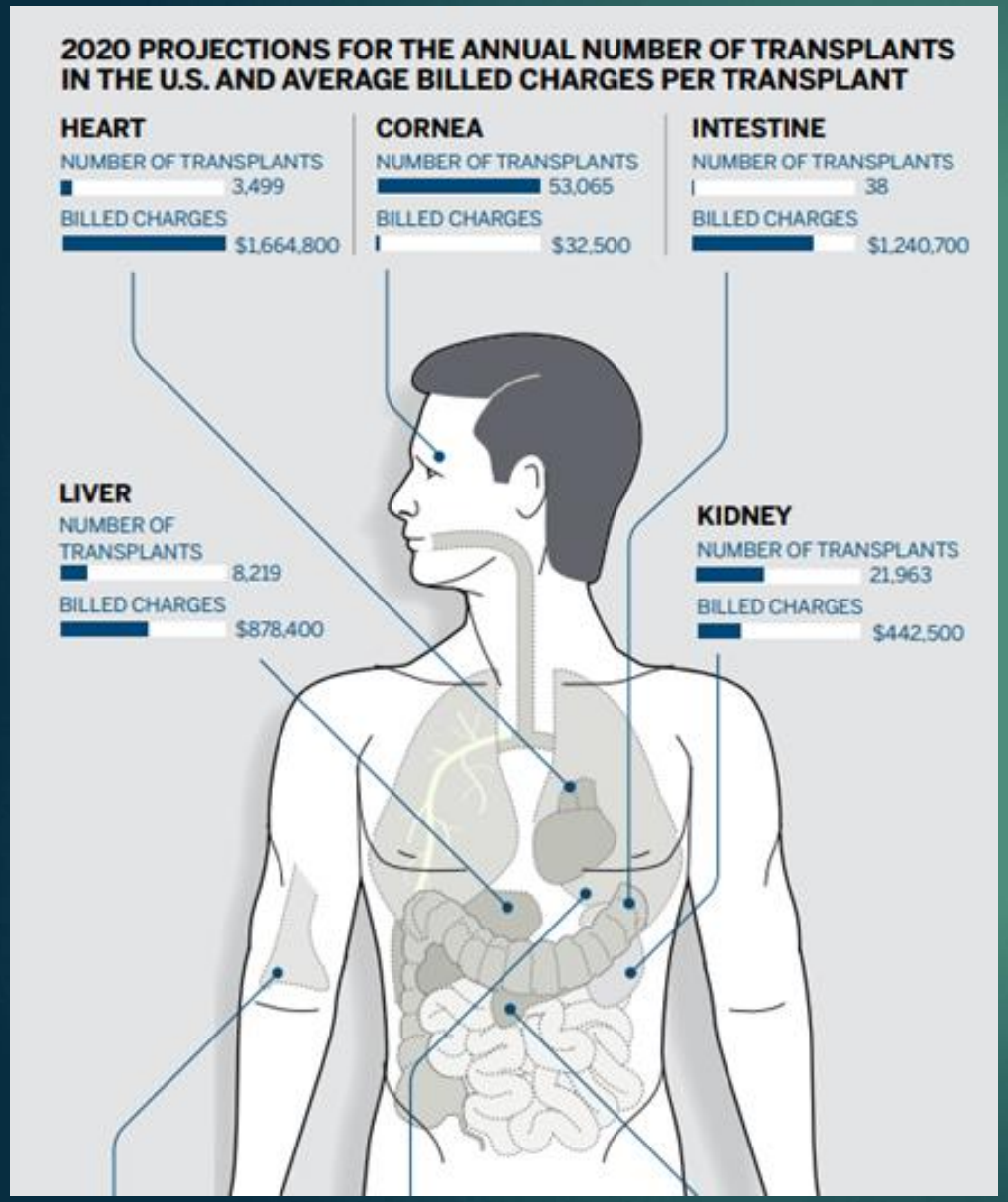
Tissue Donations are not without problems

Christy Rettenmund

How Much is a Human Body Worth?



Billed charges for organs



BONE MARROW

ALLOGENEIC

NUMBER OF TRANSPLANTS
9,950

BILLED CHARGES
$1,071,700

AUTOLOGOUS

NUMBER OF TRANSPLANTS
14,745

BILLED CHARGES
$471,600

LUNGS

SINGLE

NUMBER OF TRANSPLANTS
821

BILLED CHARGES
$929,600

DOUBLE

NUMBER OF TRANSPLANTS
2,011

BILLED CHARGES
$1,295,900

PANCREAS

NUMBER OF TRANSPLANTS
126

BILLED CHARGES
$408,800

THE 2020 PROJECTIONS ABOVE REPRESENT ESTIMATED U.S. AVERAGE BILLED CHARGES AND UTILIZATION RELATED TO THE 30 DAYS PRIOR THROUGH 180 DAYS AFTER TRANSPLANT ADMISSION.

Tissue donation

Because organ procurement organizations are permitted to harvest tissues from ***registered*** organ donors before an official coroner's report, I recommend that no one be a registered organ or tissue donor.

If you wish to donate your tissues, simply notify your family that they may release your corpse for tissue donation ***after all their questions regarding your death have been answered***.

Don’t sign a donor card, and if you have signed, have your permission removed at the DMV.

Sadly, this may not be enough.

Uniform Anatomical Gift Act

The 2006 update to the Uniform Anatomical Gift Act (UAGA) now mandates that individuals who refuse to donate must explicitly state so.

*"If family is not 'reasonably available'…**and there is no documented evidence of the decedent's choice not to donate**; the administrator of the hospital 'shall make an anatomical gift of the decedent's body or part.'"* (UAGA C.26.6-85)

I, _____,

REFUSE TO BE AN ORGAN DONOR.

Do not perform an apnea test.
Do not notify an organ procurement organization if I appear to be at or near death.

Do not take any organs for transplantation or research.

Signature: _____

Witness: _____

Witness: _____

Date: _____

Harvesting Organs and Cherishing Life

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Living Voluntary Donation

Blood, bone marrow, skin, stem cells

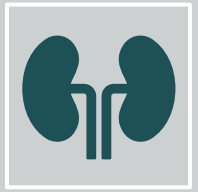
One of a pair of organs such as the kidney

A section of intestine, or pancreas

Part of lobed organs, such as the liver, or lung (In living lung transplants, the recipient receives one lobe from each of two donors.)

Living, Voluntary Donation

In addition to being a wonderful example of selfless service, these donations are generally more long lasting and successful



This is because the organ can be removed in one OR, and immediately taken to a waiting recipient in the OR next door

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Forced Organ Harvesting

The US still permits insurance companies to pay for Chinese organs

THIS PRACTICE HAS ALREADY BEEN BANNED IN OTHER COUNTRIES, SUCH AS ISRAEL, SPAIN, ITALY, TAIWAN, NORWAY, AND BELGIUM

Forced Organ Harvesting Resources

Doctors Against Forced Organ Harvesting

DAFOH

dafoh.org

INTERNATIONAL COALITION TO
END TRANSPLANT ABUSE IN CHINA

endtransplantabuse.org

In 2022, the US proposed that the United Nations investigate the situation of the Uighur Muslims in China.

Unfortunately, China was able to pressure the majority of nations to vote this down, including getting Brazil and India to abstain.

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‘I’ve already sold my daughters; now, my kidney’: winter in Afghanistan’s slums

Crushing poverty is forcing starving displaced people to make desperate choices

Organ Trafficking

Organ Trafficking

- In March, 2023, a Nigerian senator and his wife were convicted of conspiring to exploit a man for his kidney.
- After being brought to the the UK, the victim refused the procedure and contacted police.
- This is the first conviction "under modern slavery laws" in England.

eNCA
@eNCA · Follow

Nigerian senator in UK court accused of organ harvesting

enca.com
Nigerian senator in UK court accused of organ harvesting
Nigeria's former deputy senate president and his wife appeared in a London court on Tuesday ahead of their trial for organ ...

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Anne Heche

"Brain Death"

The *Los Angeles Times* reported her death on August 12th, since brain death = legal death in California. But the *New York Times* and *Washington Post* held their obituaries until her death by organ harvesting on August 14th.

The *Washington Post's* obituaries editor, Adam Bernstein, explained:

> ***It's black and white. There's no gray area here. If you're on life support, you're still alive. Other publications can make their own judgement about when they're comfortable publishing. I'm comfortable when someone is actually dead.***

Farhi, P. (2022, August 16). Why the media declared Anne Heche dead twice. The Washington Post. https://www.washingtonpost.com/media/2022/08/16/anne-heche-death-confusion/

When is Someone Dead?

In biological terms, ***death is the loss of the integrative functioning of the organism as a whole***.

The Abrahamic faith traditions (Judaism, Christianity, Islam) all define death as equivalent with ***biological*** death.

> ***Traditionally, the departure of the spirit is what causes the loss of bodily integration.***

Verheijde, Rady, and Potts. Neuroscience and Brain Death Controversies: The Elephant in the Room. Journal of Religion and Health (2018) 57:1745-1763

Ye Olde Safety Coffin

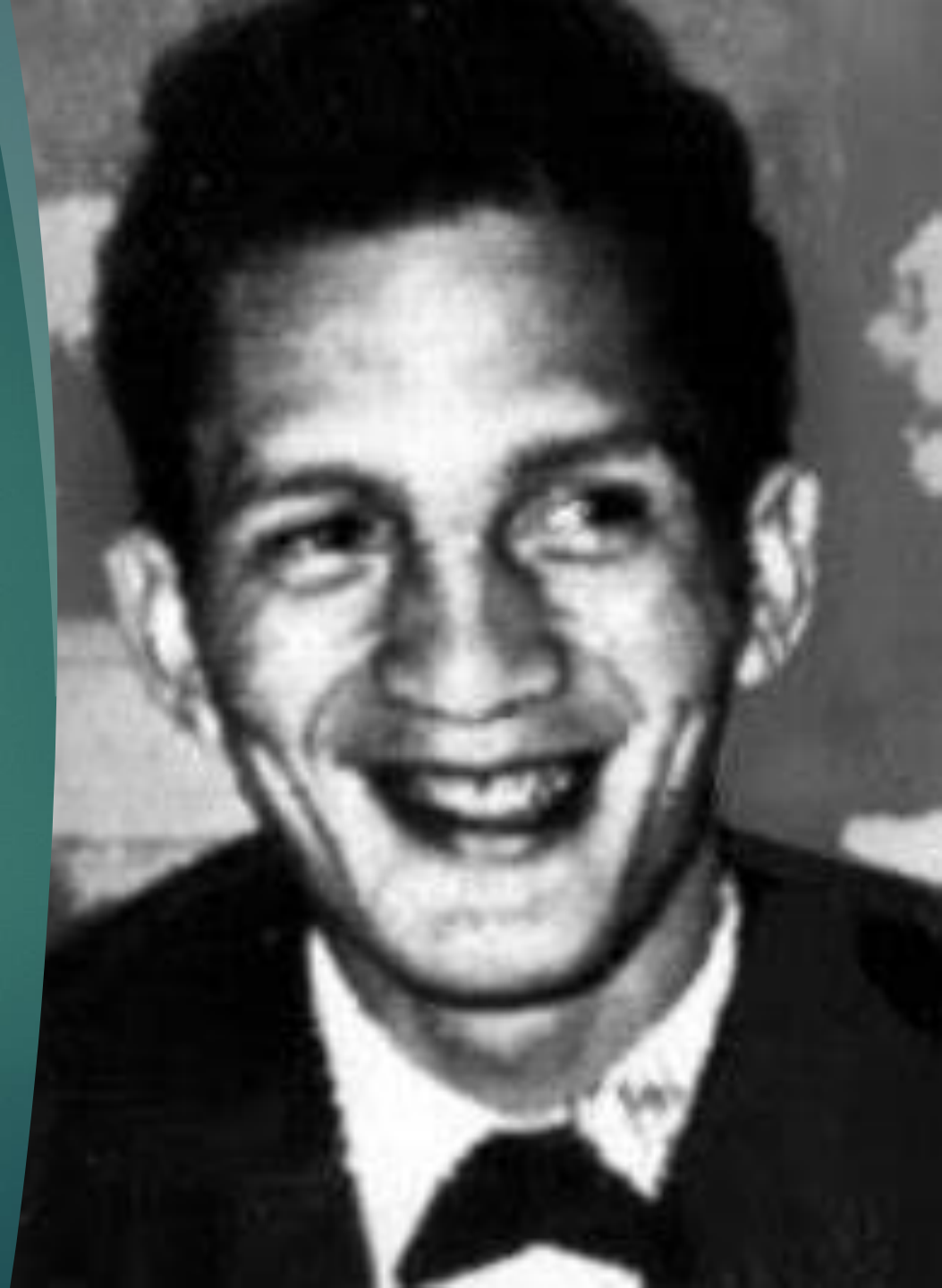
Fig: 2

The first *successful* heart transplant, January 1968

In South Africa on New Year's Day, 1968, a Black man, Clive Haupt, suffered a brain bleed while picnicking with his family, and was rushed to the hospital.

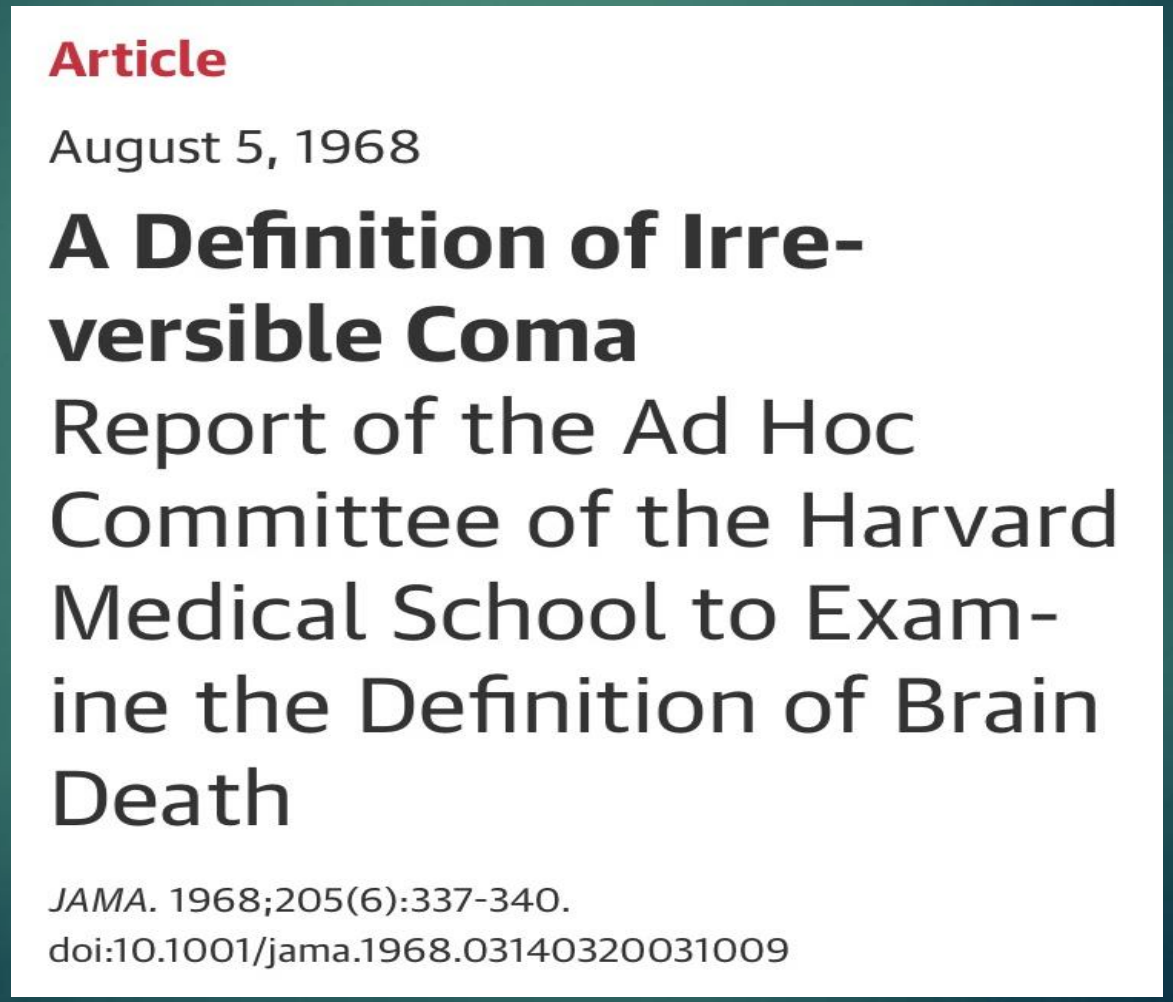
His attending physician, Dr. Hoffenberg, was approached by the transplant team and who asked him to declare Haupt dead. Initially, Hoffenberg balked at declaring a breathing, heart-beating man dead. Reportedly, one of the transplant surgeons said, "God, Bill, what kind of heart are you going to give us?"

The next morning, Dr. Hoffenberg relented and pronounced Haupt dead. His heart was removed and given to a retired white dentist.



Strickland Bishop JE, Eble JM. Brain Death: Let us remain faithful to the principle of precaution. The Catholic World Report. April 21, 2022.

The definition of death changed in 1968



Article

August 5, 1968

A Definition of Irreversible Coma

Report of the Ad Hoc Committee of the Harvard Medical School to Examine the Definition of Brain Death

JAMA. 1968;205(6):337-340.
doi:10.1001/jama.1968.03140320031009

"Our primary purpose is to define ***irreversible coma*** as a new criterion for death"

There were no new tests, studies, or evidence that comatose people were dead

The committee provided only ***utilitarian justification*** for the new definition

1. "The burden is great on patients who suffer permanent loss of intellect, on their families, on the hospitals, and on those in need of hospital beds already occupied by these comatose patients."
2. "Obsolete criteria for the definition of brain death can lead to controversy in obtaining organs for transplantation."

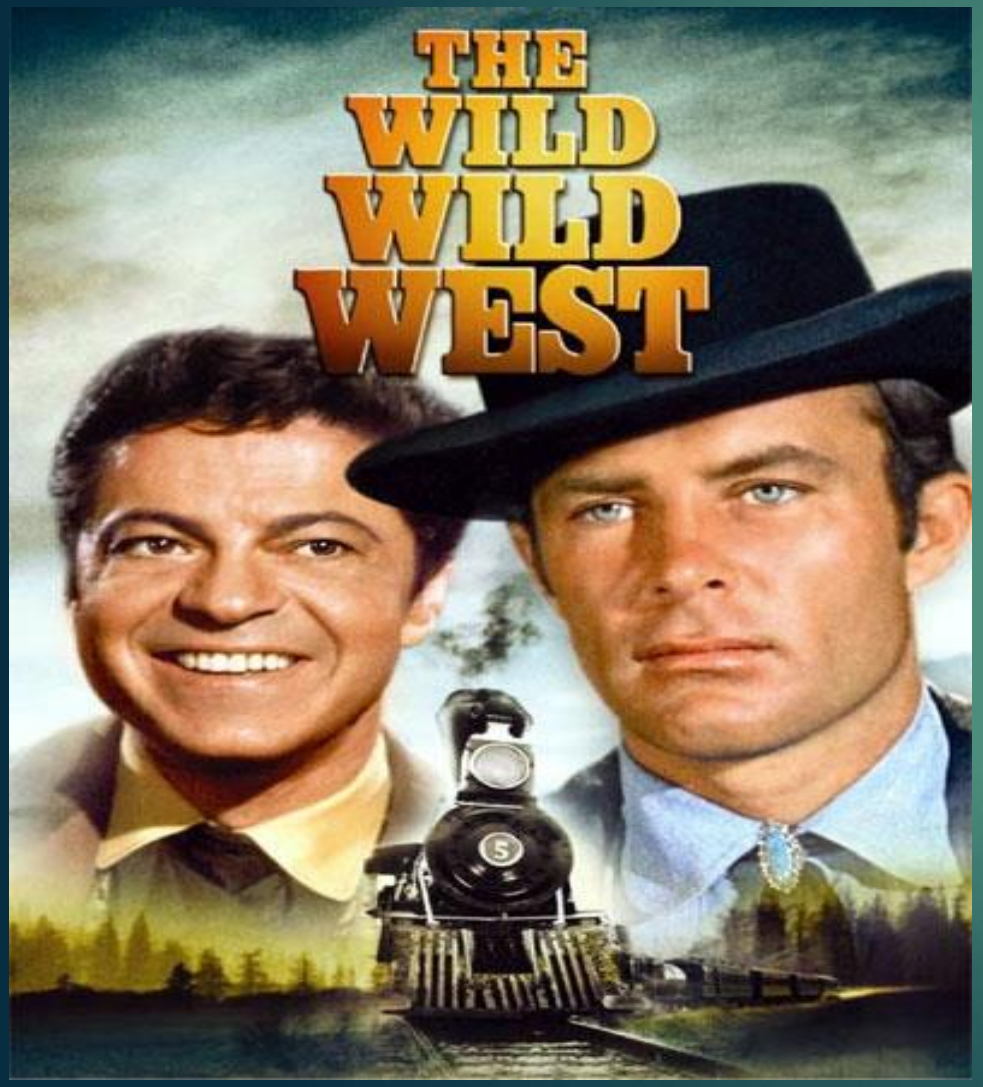
A Definition of Irreversible Coma. *JAMA*. 1984;252(5):677–679. doi:10.1001/jama.1984.03350050065031

“Our primary purpose is to define irreversible coma as a new criterion for death.”

This redefinition allowed organ procurement to skirt the dead donor rule by simply declaring comatose people to be “dead”.

Dead Donor Rule: People must neither be alive when organs are removed nor killed by the process of organ removal.

Brain Death, 1968-1981



"By 1978, over thirty different diagnostic criteria had been published, none of them validated; neither had any consensus on the conceptual brain emerged."

Shewmon DA. Brain Death: Can It Be Resuscitated? Hastings Center Report 39, no. 2 (2009): 18-24

Defining Death:

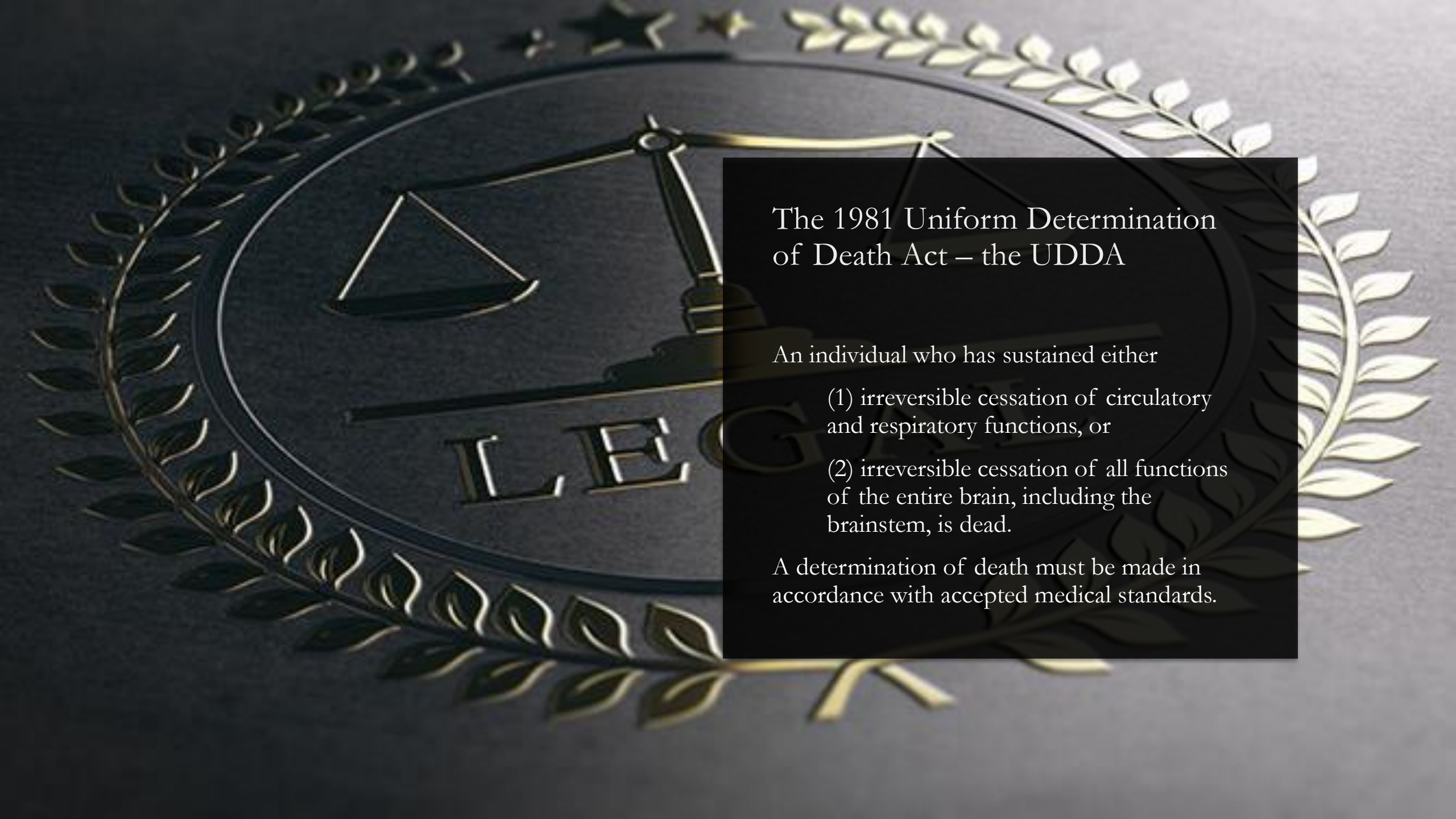
1981 President's Commission for the Study of Ethical Problems In Medicine & Biomedical & Behavioral Research

The Commission maintained a BIOLOGICAL definition of death: the loss of integrative functioning of the organism as a whole.

1. However, they believed that the brain was the *"Master Integrator"* of the body, without which integrative functioning would very quickly be lost.

2. They asserted that the development of technologies such as ventilators to sustain life *"masked"* that death had already occurred.

- Seema K. Shah. Piercing the Veil: the limits of brain death as a legal fiction. 48 U. MICH. J. L. REFORM 301(2015)



The 1981 Uniform Determination of Death Act – the UDDA

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.

Is the Brain the "Master Integrator"?

In 1998, this was *disproved* by Dr. D. Alan Shewmon, a pediatric neurologist at UCLA, who documented **175 cases of "brain dead" people who lived** after the declaration of death under the UDDA, some for more than 20 years!

Shewmon DA. Chronic "brain death": Meta-analysis and conceptual consequences. Neurology 1998;51;1538-1545.

The Brain is NOT "The Master Integrator"

These 175 "brain dead" people *continued to show integrative functioning of their bodies*

1. Wound healing
2. Spontaneous movements
3. Maintenance of body temperature
4. Mounting of appropriate stress responses
5. Fighting infections
6. Going through puberty
7. Gestating pregnancies

Shewmon DA. Chronic "brain death": Meta-analysis and conceptual consequences. Neurology 1998;51:1538-1545

Does the Ventilator "Mask Death"? No.

Life and death are mutually exclusive: does machinery somehow have the power of producing life?

The ventilator only insufflates: it has no power over gas exchange/respiration at the cellular level or the capillary-alveolar interface.

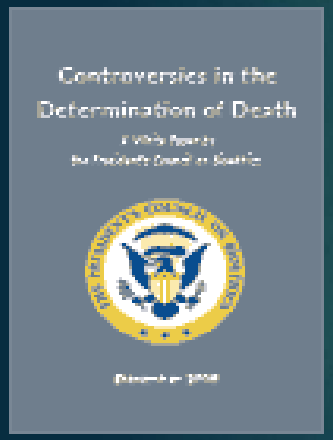
If it is true that the ventilator "masks" death, are there other ICU patients that are actually dead and are fooling doctors and nurses?

Nguyen D. Pope John Paul II and the neurological standard for the determination of death: A critical analysis of his address to the Transplantation Society. The Linacre Quarterly 84 (2) 2017, 155-186.

The 2008 President's Council on Bioethics: Controversies in the Determination of Death

Because of continuing controversy about "brain death", another President's Council was convened. This Council decided that since *integrative function continues after an accurate diagnosis of brain death*, a re-examination of the neurologic criteria for death was needed.

They noted that Shewmon's work left two options:



1. Abandon neurological criteria for determining death
2. Develop a new rationale for explaining why neurological criteria should equal death

The 2008 President's Council on Bioethics:

Controversies in the Determination of Death

"Total Brain Failure"

- An organism is no longer alive when it ceases to perform the "fundamental vital work of a living organism – the work of self-preservation, achieved through the organism's need-driven commerce with the surrounding world."
- Without any reason being given, the council singled out two forms of such commerce as being significant:
  1. Breathing
  2. Consciousness

Shewmon DA. Brain Death: Can it Be Resuscitated? Hastings Center Report 39, no. 2 (2009): 18-24.

And Just Like That…

The definition of death changed from biological to philosophical.

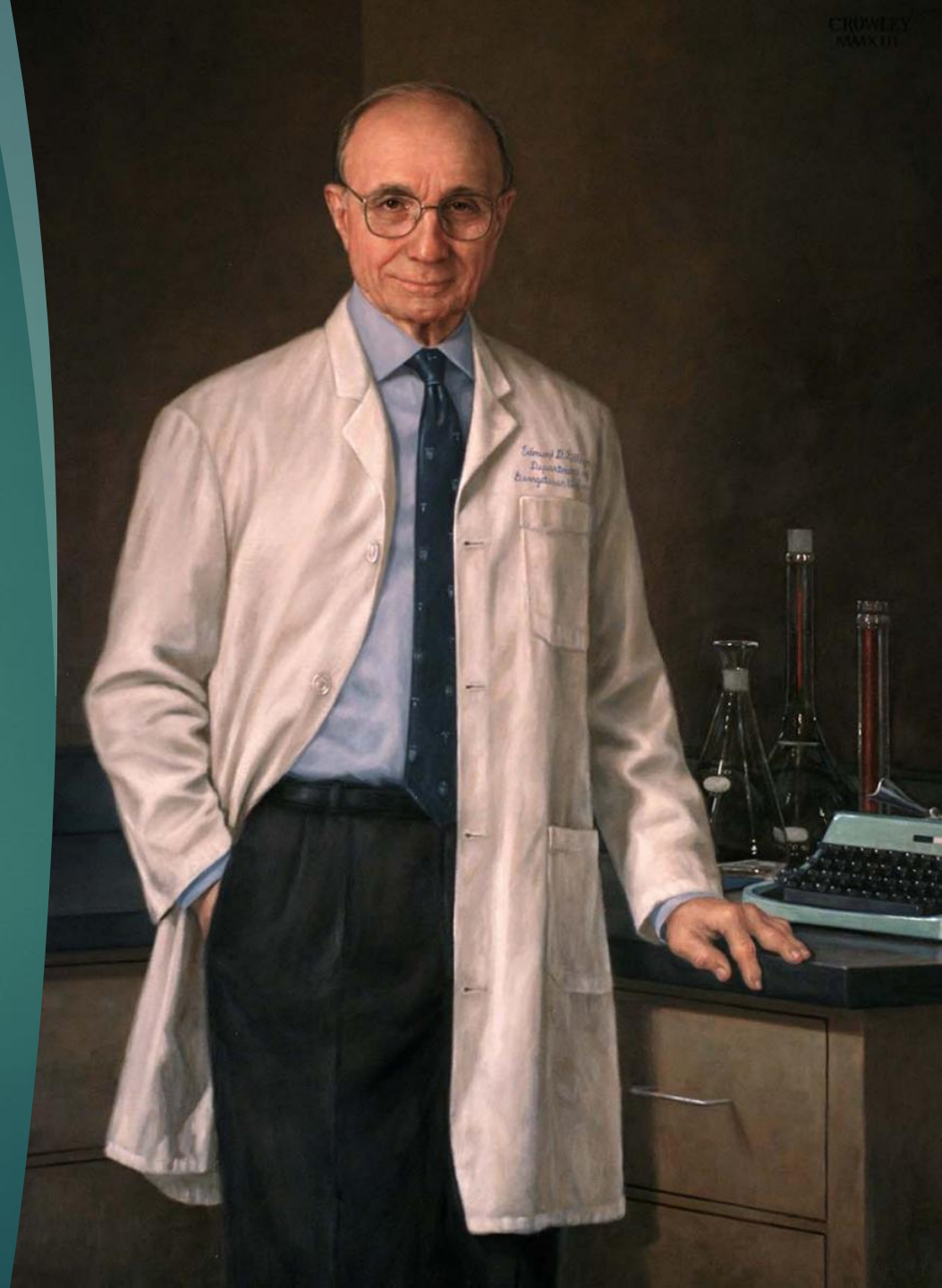
Since it's been established that BD people have continued integrated biological function, ***the definitions of death have shifted to questions of the essence of humanness.***

The 2008 President's Council on Bioethics: Controversies in the Determination of Death

The Chairman, Edmund D. Pellegrino MD, disagreed, and wrote in his minority dissent:

"Ideally, a full definition would link the concept of life (or death) with its clinical manifestations as closely as possible,"

"The only indisputable signs of death are those we have known since antiquity, i.e., loss of sentience, heartbeat, and breathing; mottling and coldness of skin; muscular rigidity; and eventual putrefaction as the result of generalized autolysis of body cells."



The 2008 President's Council
Failed to accurately reflect the science

1. "Total Brain Failure" is inaccurate, as people with a clinical diagnosis of BD still have certain brain functions:
   - 20% have EEG activity
   - Over 50% have a functioning hypothalamus, a part of the brain
2. Wound healing, fighting off infections, and the stress response to the incision to remove organs are all reactions to the environment and a way to express a need for self-preservation.
3. "Lack of breathing and consciousness" is too broad: it would include fetuses in early pregnancy that do not yet breathe or have consciousness. (Though there is controversy over whether fetuses are persons, no one claims that they are dead!)

Shewmon DA. Brain Death: Can It Be Resuscitated? Hastings Center Report 39, no 2 (2009): 18-24./ Joffe AR, Anton NR, Duff JP, deCaen A. A survey of American neurologists about brain death: understanding the conceptual basis and diagnostic tests for brain death. Ann Intensive Care. 2012 Feb 17;2(1):4.

The 2010 American Academy of Neurology Guidelines for Determining BD in Adults

Wijdicks EFM, Varelas PN, Gronseth GS, Greer DM. Evidence-Based Guideline Update: Determining Brain Death in Adults. Neurology 2010;74:1911-1918.

Figure 1. Checklist for Determination of Brain Death

Prerequisites (all must be checked)

- ☐ Coma, irreversible and cause known.
- ☐ Neuroimaging explains coma.
- ☐ CNS depressant drug effect absent (if indicated toxicology screen; if barbiturates given, serum level <10 µg/mL).
- ☐ No evidence of residual paralytics (electrical stimulation if paralytics used).
- ☐ Absence of severe acid-base, electrolyte, endocrine abnormality.
- ☐ Normothermia or mild hypothermia (core temperature >36°C).
- ☐ Systolic blood pressure ≥100 mm Hg.
- ☐ No spontaneous respirations.

Examination (all must be checked)

- ☐ Pupils nonreactive to bright light.
- ☐ Corneal reflex absent.
- ☐ Oculocephalic reflex absent (tested only if C-spine integrity ensured).
- ☐ Oculovestibular reflex absent.
- ☐ No facial movement to noxious stimuli at supraorbital nerve, temporomandibular joint.
- ☐ Gag reflex absent.
- ☐ Cough reflex absent to tracheal suctioning.
- ☐ Absence of motor response to noxious stimuli in all four limbs (spinally mediated reflexes are permissible).

Apnea testing (all must be checked)

- ☐ Patient is hemodynamically stable.
- ☐ Ventilator adjusted to provide normocarbia ($PaCO_2$ 35–45 mm Hg).
- ☐ Patient preoxygenated with 100% FiO_2 for >10 minutes to PaO_2>200 mm Hg.
- ☐ Patient well-oxygenated with a positive end-expiratory pressure (PEEP) of 5 cm of water.
- ☐ Provide oxygen via a suction catheter to the level of the carina at 6 L/min or attach T-piece with continuous positive airway pressure (CPAP) at 10 cm H_2O.
- ☐ Disconnect ventilator.
- ☐ Spontaneous respirations absent.
- ☐ Arterial blood gas drawn at 8–10 minutes, patient reconnected to ventilator.
- ☐ PCO_2 ≥60 mm Hg, or 20 mm Hg rise from normal baseline value.

OR:

- ☐ Apnea test aborted.

Ancillary testing (only one needs to be performed) (to be ordered only if clinical examination cannot be fully performed due to patient factors, or if apnea testing inconclusive or aborted)

- ☐ Cerebral angiogram
- ☐ HMPAO SPECT
- ☐ EEG
- ☐ TCD

Time of death (DD/MM/YY) _____/_____/_____

Name of physician and signature

_____

The 2010 American Academy of Neurology Guidelines for Determining BD in Adults

"Many of the details of the clinical neurologic examination to determine brain death cannot be established by evidence-based methods…It must be emphasized that this guidance is opinion-based."

Wijdicks EFM, Varelas PN, Gronseth GS, Greer DM. Evidence-Based Guideline Update: Determining Brain Death in Adults. Neurology 2010;74:1911-1918.

Are there patients who fulfill the clinical criteria of brain death who recover brain function?	
Insufficient evidence	The criteria for the determination of brain death given in the 1995 AAN practice parameter have not been invalidated by published reports of neurologic recovery in patients who fulfill these criteria (**Level U**).
What is an adequate observation period to ensure that cessation of neurologic function is permanent?	
Insufficient evidence	There is insufficient evidence to determine the minimally acceptable observation period to ensure that neurologic functions have ceased irreversibly (**Level U**).
Are complex motor movements that falsely suggest retained brain function sometimes observed in brain death?	
Weak evidence	Complex-spontaneous motor movements and false-positive triggering of the ventilator may occur in patients who are brain dead (**Level C**).
What is the comparative safety of techniques for determining apnea?	
Insufficient evidence	There is insufficient evidence to determine the comparative safety of techniques used for apnea testing (**Level U**).
Are there new ancillary tests that accurately identify patients with brain death?	
Insufficient evidence	There is insufficient evidence to determine if newer ancillary tests accurately confirm the cessation of function of the entire brain (**Level U**).

CLINICAL CONTEXT

This review highlights severe limitations in the current evidence base. Indeed, there is only one study that prospectively derived criteria for the determination of brain death.

Despite the paucity of evidence, much of the framework necessary for the development of "accepted medical standards" for the declaration of brain death is based on straightforward principles. These principles can be derived from the definition of brain death provided by the Uniform Determination of Death Act (UDDA). To determine "cessation of all functions of the entire brain, including the brain stem," physicians must determine the presence of unresponsive coma, the absence of brainstem reflexes, and the absence of respiratory drive after a CO_2 challenge. To ensure that the cessation of brain function is "irreversible," physicians must determine the cause of coma, exclude mimicking medical conditions, and observe the patient for a period of time to exclude the possibility of recovery.

The UDDA-derived principles define the essential elements needed to determine brain death. However, because of the deficiencies in the evidence base, clinicians must exercise considerable judgment when applying the criteria in specific circumstances.

The 2010 American Academy of Neurology Guidelines for Determining BD in Adults

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The UDDA-derived principles define the essential elements needed to determine brain death. However, because of the deficiencies in the evidence base, clinicians must exercise considerable judgment when applying the criteria in specific circumstances.

Dr. Doyen Nguyen on the AAN Guidelines:

With its assertion that the presence of neuroendocrine function, reflexes, and spontaneous movements is compatible with death, the AAN standard contradicts both scientific realism and the tenets of sound anthropology.

Nguyen D. Does the Uniform Determination of Death Act need to be revised? The Linacre Quarterly 2020, Vol. 87(3) 317-333.

In 2012, Dr. Ari Joffe, pediatrician and critical care specialist at the University of Alberta, surveyed neurologists:

- Nearly half (48%) equated BD with death because of a "higher brain" concept of death (e.g. irreversible loss of consciousness or personhood) rather than as a biological state.

- More than half (54%) did NOT think that brain death and cardiac death are the same state.

Joffe AR, Anton NR, Duff JP, deCaen A. A survey of American neurologists about brain death: understanding the conceptual basis and diagnostic tests for brain death. Ann Intensive Care. 2012 Feb 17;2(1):4

With the shift to non-biological definitions of death, our patients are not being given truly informed consent about organ donation

"When I considered being an organ donor, I was under the assumption that once I was pronounced "dead" (all my organs shut down INCLUDING MY ENTIRE BRAIN and my body dead and cold) that then I would certainly share any parts of my body that may help someone. I was wrong…"

Rodriguez-Arias D. The Dead Donor Rule as Policy Indoctrination. Defining Death: Organ Transplantation and the Fifty-Year Legacy of the Harvard Report on Brain Death, special report, Hastings Center Report 48, no. 6 (2018): S39-S42.

"Policy-making becomes indoctrination whenever public opinions and preferences are intentionally manipulated in ways that destroy or prevent citizens' independent judgment and rational deliberation…The history of death determination in the context of organ donation can be described as an indoctrinating attempt to settle a moral controversy."

~ David Rodriguez-Arias

Researcher in moral philosophy & Bioethics at University of Granada

Donation after “Brain Death”

ZACK DUNLAP

“The next thing I remember was laying in the hospital bed, not being able to move, breathe – couldn’t do anything, on a ventilator. I heard someone say, ‘I’m sorry, he’s brain dead. He’s passing away.’ And there’s nothing I could do, just get mad. I couldn’t do anything – to sign – at all… I tried to scream, tried to move, just got extremely angry.”

Donation after “Brain Death”

ZACK DUNLAP

How did Zack Dunlap recover despite a physical exam consistent with brain death and a "no flow" cerebral perfusion scan?

Most likely a case of Global Ischemic Penumbra (GIP)

- Normal cerebral blood flow
  50ml/100g/min
- EEG becomes isoelectric
  20ml/100g/min
- Tissue necrosis ensues
  10ml/100g/min

Between 10-20ml/100g/min, blood flow is just enough to prevent necrosis but insufficient to support function. Thus GIP, a potentially reversible phenomena, could be a perfect mimicker of BD.

Nguyen D. Pope John Paul II and the neurological standard for the determination of death: A critical analysis of his address to the Transplantation Society. The Linacre Quarterly 84 (2) 2017, 155–186.

Dr. D. Alan Shewmon

"This (GIP) is not a hypothesis but a mathematical necessity. The clinically relevant question is therefore not whether GIP occurs but how long it might last. If, in some patients, it could last more than a few hours, then it would be a supreme mimicker of BD by bedside clinical examination, yet the non-function (or at least some of it) would be in principle reversible."

"Moreover, standard tests of intracranial blood flow (which are not even required by the Guidelines…) may lack the precision necessary to distinguish between penumbra-level flow and no flow."

Shewmon DA. Statement in Support of Revising the Uniform Determination of Death Act and in Opposition to a Proposed Revision. J Med Philos. 2021 May 14:jhab014.

Lawsuits: Jahi McMath

- 13 year old suffered cardiac arrest due to postop bleeding after tonsillectomy
- BD diagnosis made according to 2010 AAN standards, making her legally dead in California.
- Four isoelectric EEGs
- Radioisotope scan showing no intracranial blood flow
- Three apnea tests
- Her parents disputed that she was dead, and moved to New Jersey, where Jahi *lived* 4 more years.

Lawsuits: Jahi McMath

- 3 months after moving to New Jersey, she experienced pubertal development and menarche
- She began to respond to commands and showed HR variability to her mother's voice
- MRI 9 ½ months later showed gross preservation of the cortical ribbon, thalamus, basal ganglia, and cerebellum
- Though she had fulfilled the AAN guidelines for BD, 2 neurologists later testified that she was not brain dead but in a minimally conscious state

Shewmon DA. Statement in Support of Revising the Uniform Determination of Death Act and in Opposition to a Proposed Revision. J Med Philos. 2021 May 14:jhab014.

The Revised UDDA (RUDDA)

"In response to a number of recent lawsuits related to brain death determination," the American Academy of Neurology has proposed a revision to the UDDA, the RUDDA.

Lewis A, et al. An interdisciplinary response to contemporary concerns about brain death determination. Neurology Feb 2018, 90 (9) 423-426.

Lewis A, Bonnie RJ, Pope T. 2020a. It's Time to Revise the Uniform Determination of Death Act. Annals of Internal Medicine 172 (2): 143-4.

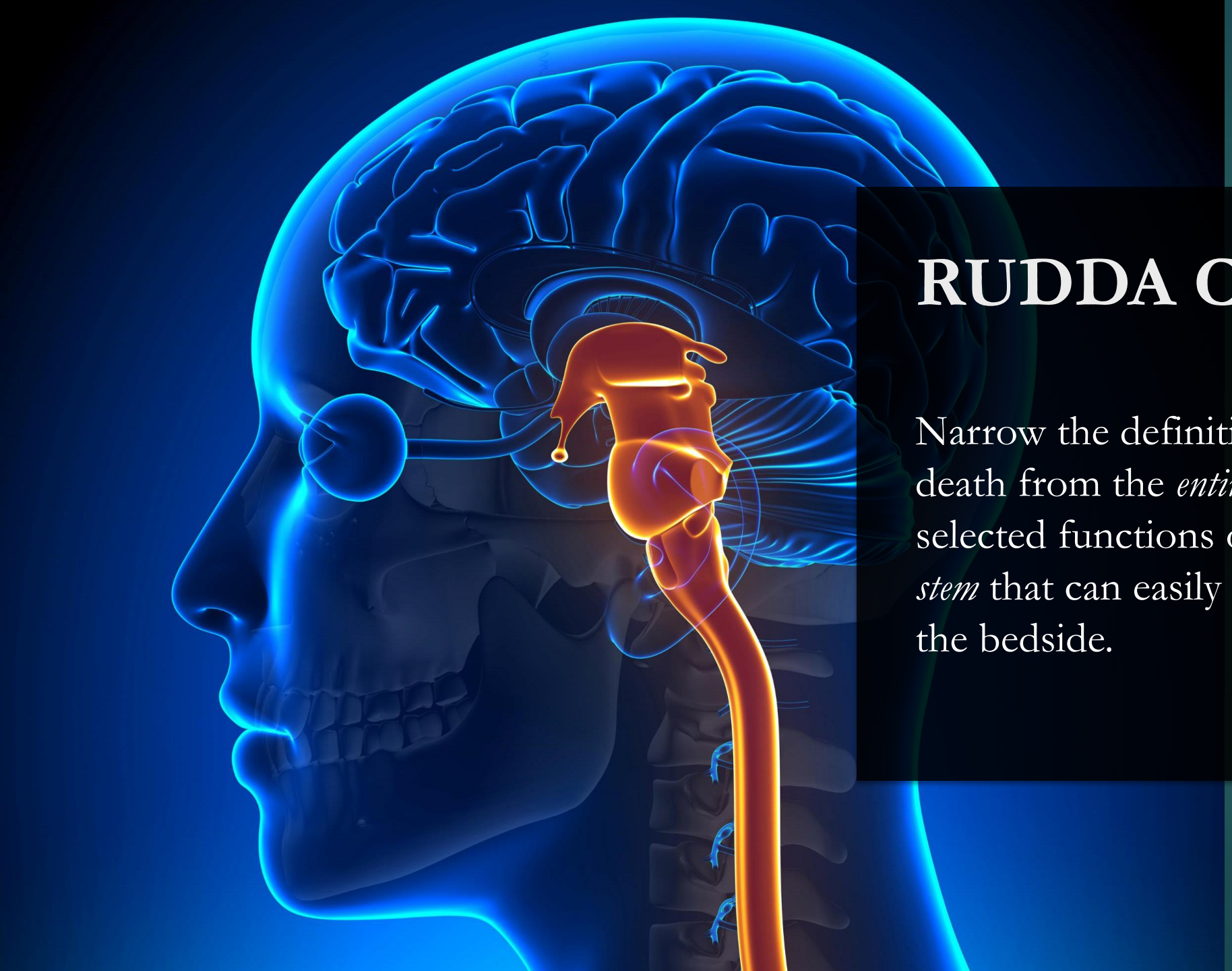
Proposed language for the RUDDA being considered by the Uniform Law Commission

An individual who has sustained either	***Permanent*** cessation of circulatory and respiratory functions, or
	Permanent coma, cessation of spontaneous respiratory functions, and loss of brainstem reflexes, is dead.

A determination of death must be made in accordance with accepted medical standards.

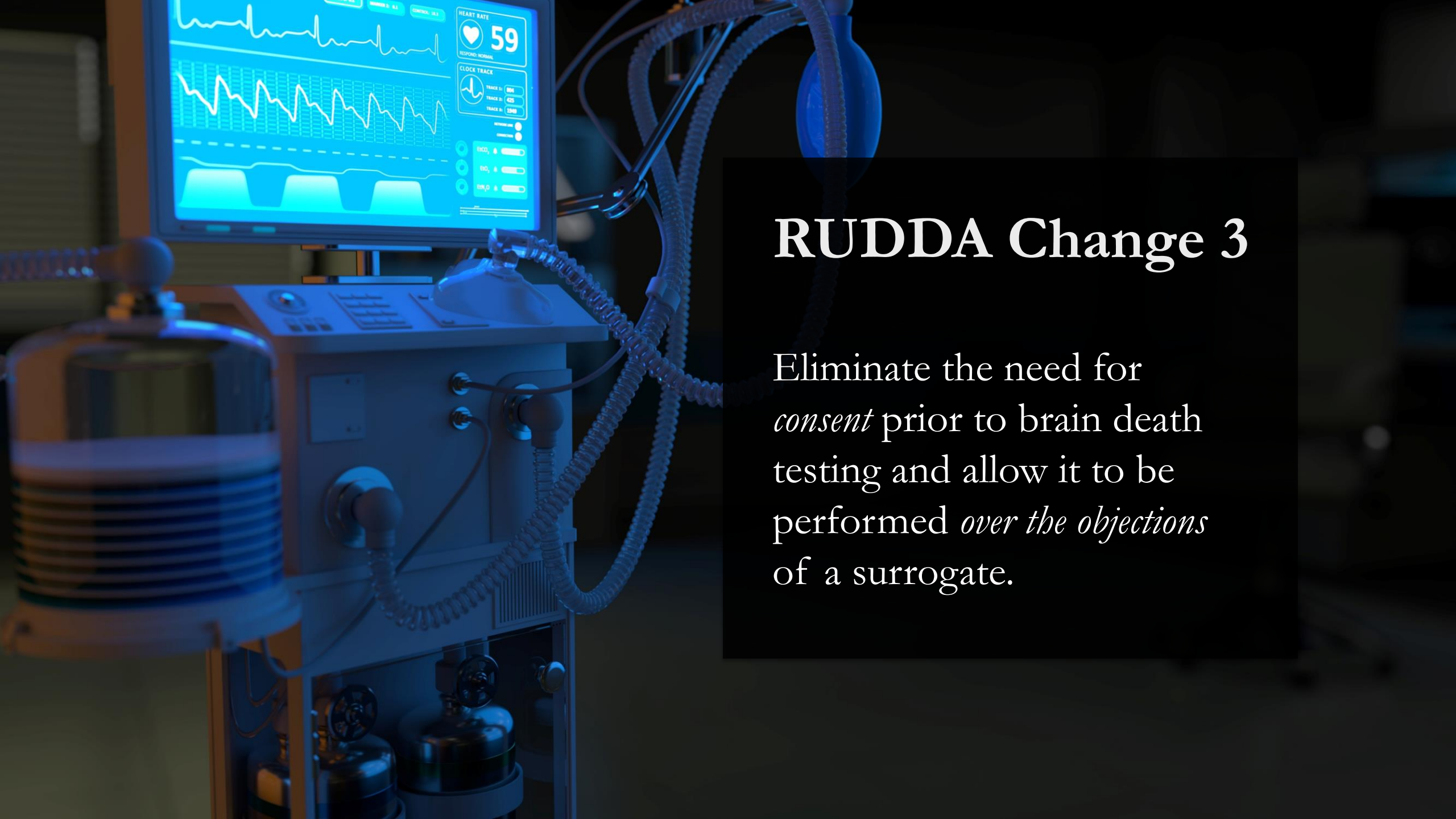
RUDDA Change 1

Replace the term *irreversible* in the standards with the term *permanent*



RUDDA Change 2

Narrow the definition of brain death from the *entire brain* to just selected functions of the *brain stem* that can easily be tested at the bedside.



RUDDA Change 3

Eliminate the need for *consent* prior to brain death testing and allow it to be performed *over the objections* of a surrogate.

The RUDDA is being opposed

The Catholic Medical Association and the Christian Medical and Dental Associations have written letters to the Uniform Law Commission protesting these changes

D. Alan Shewmon and 107 experts in medicine, bioethics, philosophy, and law have submitted a paper stating

> ***"People have a right to not have a concept of death that experts vigorously debate imposed upon them against their judgment and conscience; any revision of the UDDA should therefore contain an opt-out clause for those who accept only a circulatory-respiratory criterion."***

Shewmon DA. Statement in Support of Revising the Uniform Determination of Death Act and in Opposition to a Proposed Revision. J Med Philos. 2021 May 14:jhab014.

The RUDDA

Unless “opt-out” language is included, the RUDDA will *remove* the ability for families to *refuse* a brain death determination and will make it more *difficult* for them to sue after it has been given.

Harvesting Organs and Cherishing Life

- Tissue Donation
- Living Donation
- Forced Organ Harvesting
- Organ Trafficking
- Donation after “Brain Death”
- Donation after Circulatory Death

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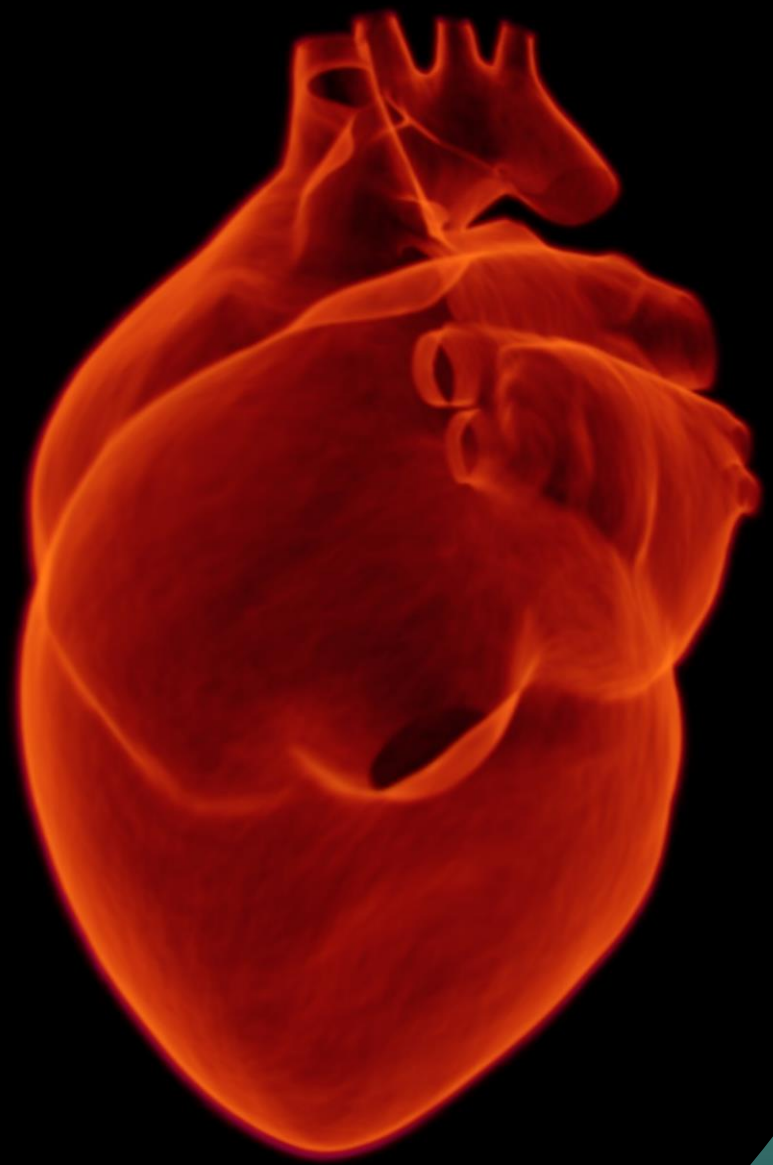

Donation After Circulatory Death

In the 1990s, a “new” donor pool was re-discovered

Donation After Circulatory Death

These patients are not “brain dead”, but are not expected to survive

Their care is withdrawn in a way that allows their organs to be harvested

Donation After Circulatory Death

The patient is taken to the OR or a room nearby, with the transplant team ready to start harvesting as soon as possible

Medical support is withdrawn, and the patient is monitored until their pulse stops. DCD does not require EKG silence, but rather no pulse.

After a 2-5 minutes of pulselessness, these people are taken to the OR for organ harvesting. **But** is 2-5 minutes enough time to be sure that they are dead?

Donation After Circulatory Death

Many medical professionals are uncomfortable with harvesting organs after only 2-5 minutes of pulselessness.

Donation After Circulatory Death

Many medical professionals are uncomfortable with harvesting organs after only 2-5 minutes of pulselessness.

Patients are routinely resuscitated after this amount of time.

Donation After Circulatory Death

DCD is banned in Finland, Germany, Bosnia-Herzegovina, Hungary, Lithuania, and Turkey.

The Ministry of Health in the Netherlands is currently considering a proposal to ban DCD there as well.

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Pronounced Dead Twice: What Should an Attending Physician Do in Between?

Authors' Contribution:
Study Design A
Data Collection B
Statistical Analysis C
Data Interpretation D
Manuscript Preparation E
Literature Search F
Funds Collection G

ABCDEFG 1 Annie Bao
ABCDEFG 2 Shiping Bao

1 Department of Biology, Duke University, Durham, NC, U.S.A.
2 Champaign County Coroner, Urbana, IL, U.S.A.

Corresponding Author: Annie Bao, e-mail: annie.bao@duke.edu
Conflict of interest: None declared

Patient: Female, 39-year-old
Final Diagnosis: Acute Fentanyl toxicity due to a Fentanyl injection in the hospital
Symptoms: Unresponsive
Medication: Fentanyl
Clinical Procedure: Endovascular coiling for the ruptured berry aneurysm
Specialty: Neurosurgery

Objective: Unusual clinical course

Background: Organ donation after cardiac death (DCD) is a well-accepted practice in the medical, philosophical, and legal fields. It is important to determine the amount of time required for the loss of circulation to lead to irreversible brain loss, and ultimately brain death.

Case Report: We report a rare case of organ donation after cardiac death. During organ procurement, it was noted that the patient's aortic and renal arteries were pumping and pulsing, and her cardiopulmonary activities were back to unexpected levels. The organ procurement surgery was stopped. At the time, the patient was given Fentanyl and Lorazepam. Subsequently, she was pronounced dead again 18 minutes after she was initially pronounced dead. After a complete autopsy, the cause of death was determined to be acute Fentanyl toxicity due to a Fentanyl injection in the hospital. The manner of death was determined to be homicide.

Conclusions: What should an attending physician do in the rare case that the organ procurement team notices the patient is still alive? It is our opinion that: first, the organ procurement team should leave the room immediately and withdraw from the case, and second, the attending physician should let nature run its course and refrain from excessive medical intervention.

Keywords: Autopsy • Bioethics • Death • Fentanyl • Resuscitation Orders • Tissue and Organ Procurement

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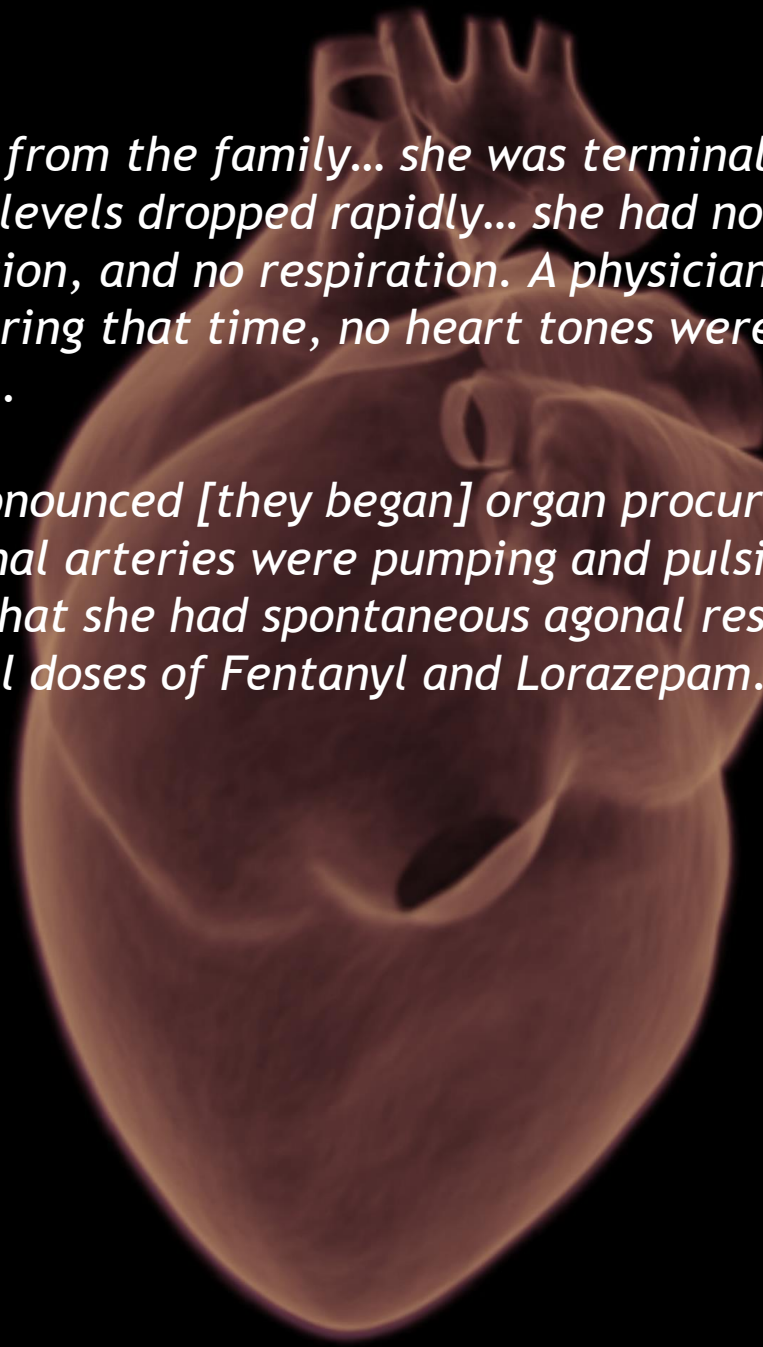

After consent was provided from the family… she was terminally extubated. Her heart rate and oxygen saturation levels dropped rapidly… she had no measurable blood pressure, no oxygen saturation, and no respiration. A physician listened to her heart…for an additional 2 minutes. During that time, no heart tones were heard. She was pronounced dead at 2:59am.

After cardiac death was pronounced [they began] organ procurement at 3:00am. It was seen that her aortic and renal arteries were pumping and pulsing. The organ procurement was stopped. It was noted that she had spontaneous agonal respiration. At the time, the patient was given additional doses of Fentanyl and Lorazepam.

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Subsequently, she was pronounced dead a second time at 3:17am. The cause of death was determined to be homicide.

Donation After Circulatory Death

If the donor's heart is to be harvested, the circulation to the brain is clamped off.

The organs then are re-oxygenated and ***the heart restarted*** to be sure they are healthy enough to be transplanted

Protocol for NRP-cDCD from the University of Nebraska

Safety and Effectiveness of NRP for DCD Heart Transplantation (DCDNRPHeart)

Specifically, normothermic regional perfusion involves the following steps:

1. Opening the chest through a standard sternotomy used for heart and lung procurement.
2. Ligation of the all the blood vessels that supply blood to the brain to ensure that blood flow to the brain is not reestablished once circulation is restarted as described below.
3. Standard cannulation of the aorta and the right atrium as is done for cardiac surgical procedures.
4. Initiation of cardiopulmonary bypass, which will re-establish the flow of blood to all organs of the body including the heart under normothermia. The initial step for ligation of the blood vessels to the head is necessary to ensure that blood flow to the brain does not occur.

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5. Once blood flow to the heart is established, **the heart will start beating.**

Uniform Determination of Death Act (UDDA)

The ad hoc committee's recommendations became law in 1981 in order to permit organ harvesting.

The UDDA defined death as either:

- 1. *Irreversible* cessation of circulatory and respiratory functions, or
- 2. *Irreversible* cessation of all functions of the entire brain, including the brainstem

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NRP-cDCD

The American College of Physicians recommended in 2021 that the practice of NRP-cDCD be paused, as "the burden of proof regarding the ethical and legal propriety of this practice has not been met."

American College of Physicians. Ethics, Determination of Death, and Organ Transplantation in Normothermic Regional Perfusion (NRP) with Controlled Donation after Circulatory Determination of Death (cDCD): American College of Physicians Statement of Concern. April 17, 2021.

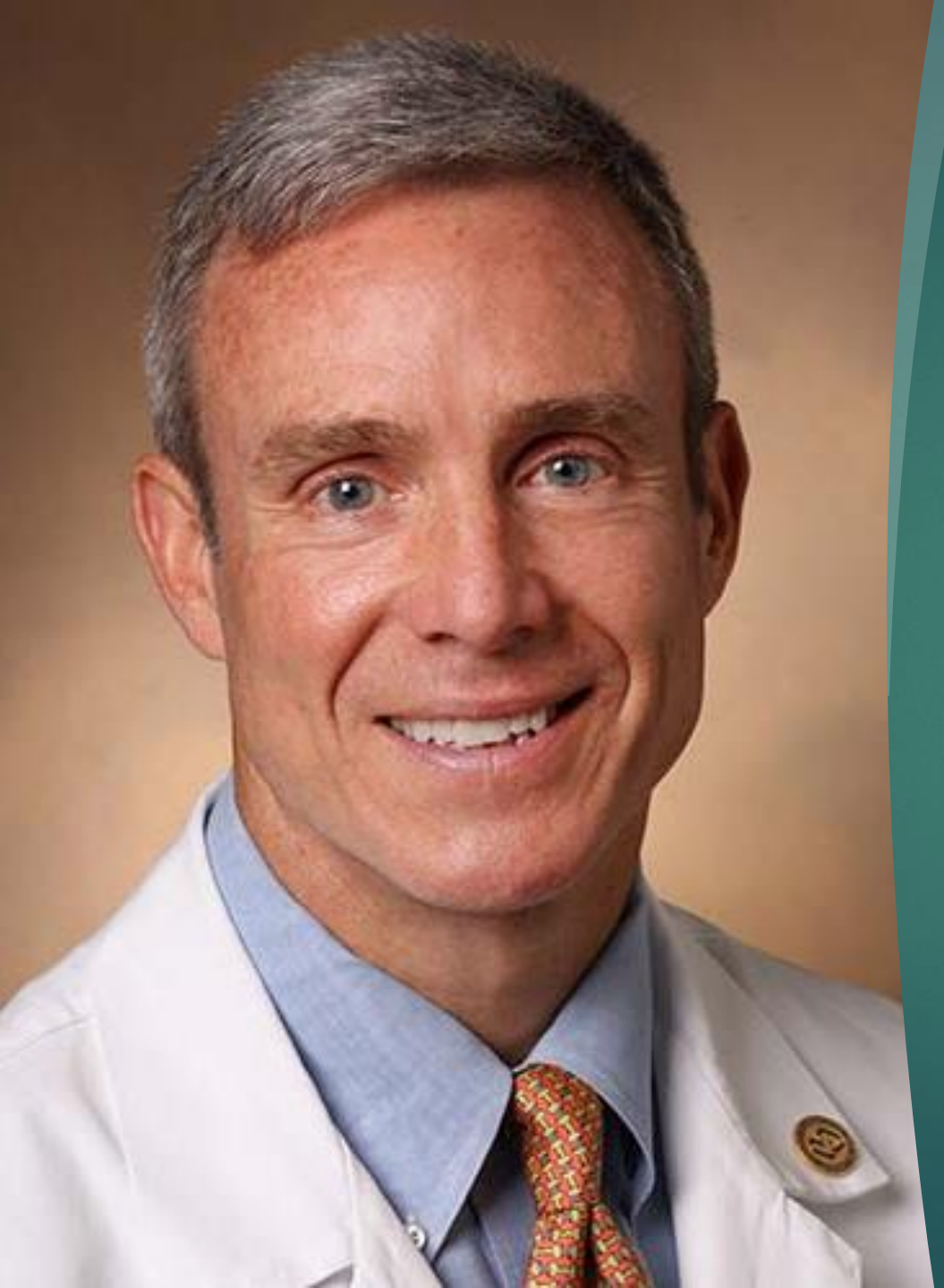
NRP-cDCD

Dr. Matthew DeCamp MD, PhD

Bioethicist at the University of Colorado

"Restarting circulation reverses what was just declared to be the irreversible cessation of circulatory and respiratory function. It is no defense to suggest that the patient was already dead when the action negates the conditions upon which the determination was made."

DeCamp M, et. al. POINT: Does Normothermic Regional Perfusion Violate the Ethical Principles Underlying Organ Procurement? Yes. Chest, vol. 162, issue 2, pp. 288-290, August 2022.



NRP-cDCD

Dr. Wes Ely MD, MPH

Critical care physician and transplant pulmonologist at Vanderbilt University

"We're so hungry for organs right now that we are pushing all the limits. I just want us to be super-cautious. We need to press the pause button on this and have some more conversations so that we can set up boundaries and stay in the right lane. The dignity of the human who donates the organs should never be sacrificed."

Dotinga, Randy. No Brain Death? No Problem: New Organ Transplant Protocol Stirs Debate. MedPage Today, Sept. 28, 2022.

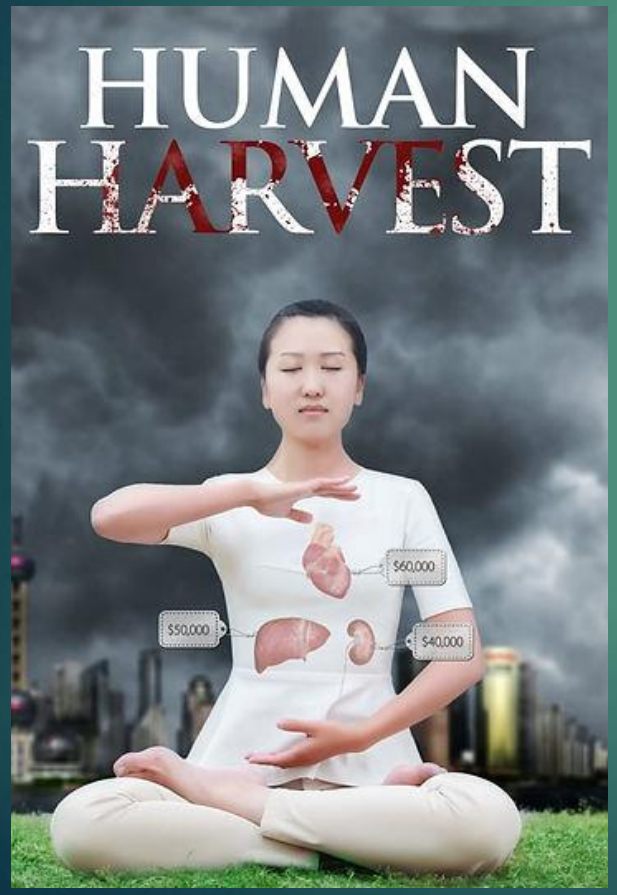
Summary and Conclusions

"Heart-beating or non-heart-beating organ procurement from patients with impaired consciousness is de facto a concealed practice of physician-assisted death, and therefore, violates both criminal law and the central tenet of medicine not to harm patients."

Verheidje JL, Rady M, McGregor JL. Brain death, states of impaired consciousness, and physician-assisted death for end-of life organ donation and transplantation. Med Health Care Philos. 2009 Nov;12(4):409-21.

Tissue Donation and Living Donation

Forced Organ Harvesting/Organ Trafficking



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I. Advances in medical science have made the old definitions of death obsolete

Recognition of Global Ischemic Penumbra (GIP) phenomenon has the potential to save people once written off as "brain dead".

Coimbra CG, Implications of ischemic penumbra for the diagnosis of brain death. Braz J Med Biol Res, December 1999, Volume 32(12) 1479-1487./

Use of fMRI has allowed early detection of "covert consciousness" in patients with acute severe traumatic brain injury.

Edlow BL, et al. Early detection of consciousness in patients with acute severe traumatic brain injury. Brain. 2017 Sep 1;140(9):2399-2414.

Hypothermia (as commonly used in resuscitation) can delay return of brain function after rewarming by as long as seven days. How many "BD" patients would have recovered if only their doctors had waited a little longer?

Parnia, Sam. Erasing Death: The Science that is Erasing the Boundaries Between Life and Death. HarperCollins, 2013, New York, NY, p. 272.

Terry Wallis

Though it was once thought "self-evident" that adult brain and spinal cord could not regenerate after injury, there is now evidence of both neuroplasticity and neuroregeneration in the adult brain.

Terry Wallis was in a minimally conscious state for 19 years but spontaneously awakened in 2003.

Pauwels L, Chalavi S, Swinnen SP. Aging and brain plasticity. Aging (Albany NY). 2018 Aug 1;10(8):1789-1790. doi: 10.18632/aging.101514. PMID: 30067225; PMCID: PMC6128435.

“Brain Dead” and Circulatory Death Harvesting

II. These are unethical, because in order to allow continued transplantation, the ***definition of death has been changed from a biological to a philosophical/opinion-based definition***

Dr. Ari Joffe

Pediatrician & Critical Care
Specialist at University of Alberta

*I have argued that **brain death** is not death itself… it leads to death when (and only when) ventilation is stopped, and therefore breathing stops, followed by cardiac arrest, followed by irreversible loss of circulation…and this is death.*

Further, I believe that at 2 to 10 minutes after loss of circulation, the DCD donor is not dead. This is because there is not necessarily irreversible loss of circulation…When exactly this state of irreversibility occurs is an important question. At present this is not known; however, it is known that it is not at even 10 minutes after cardiac arrest.

Joffe AR. The ethics of donation and transplantation: are definitions of death being distorted for organ transplantation? Philosophy, Ethics, and Humanities in Medicine 2007, 2:28.

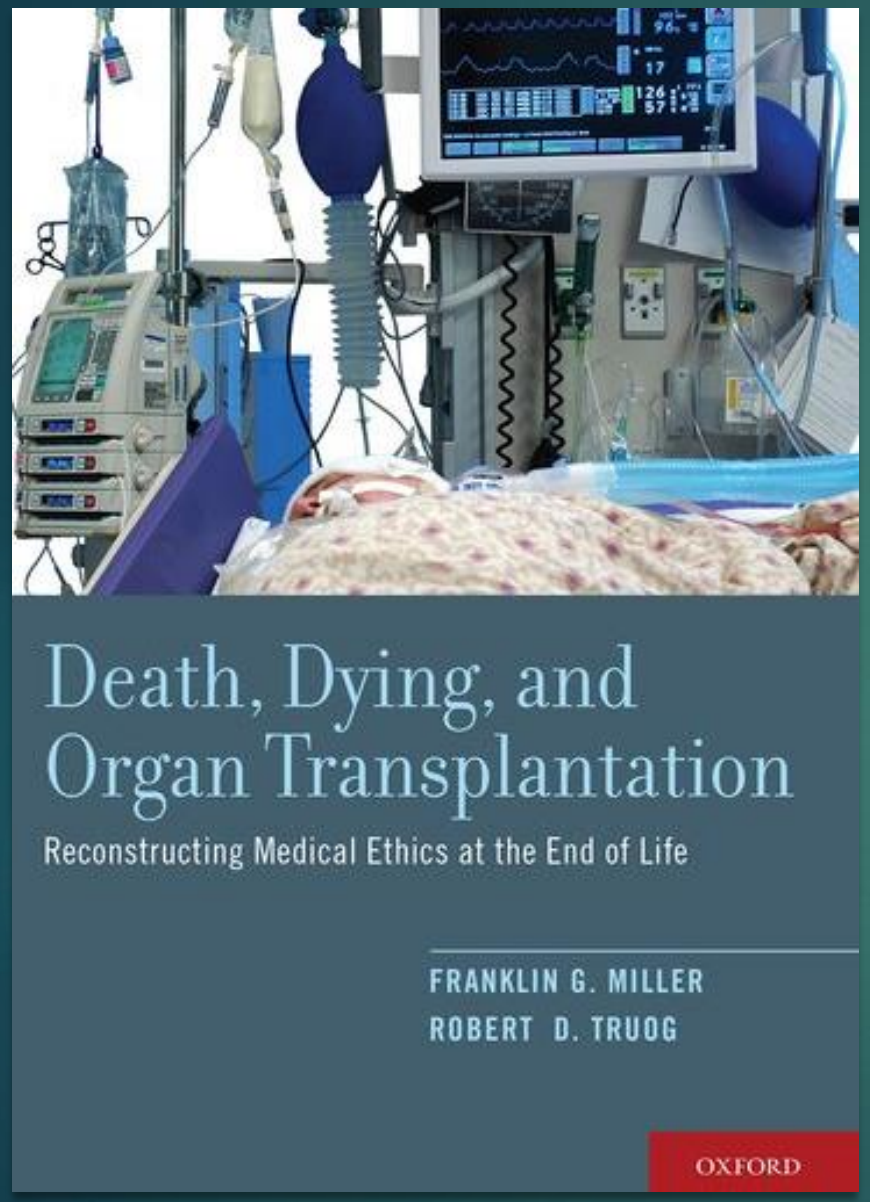
Dr. Ari Joffe

Pediatrician & Critical Care
Specialist at University of Alberta

*Whether I am challenging the practice of organ donation is another question. The question is not whether organ donors are dead (because they are **not**). The question is whether organs can be harvested before death from patients whose **prognosis** is death, and hence be a contributing cause of death. My argument is that this is the current practice, and this is also precisely what needs to be debated urgently.*

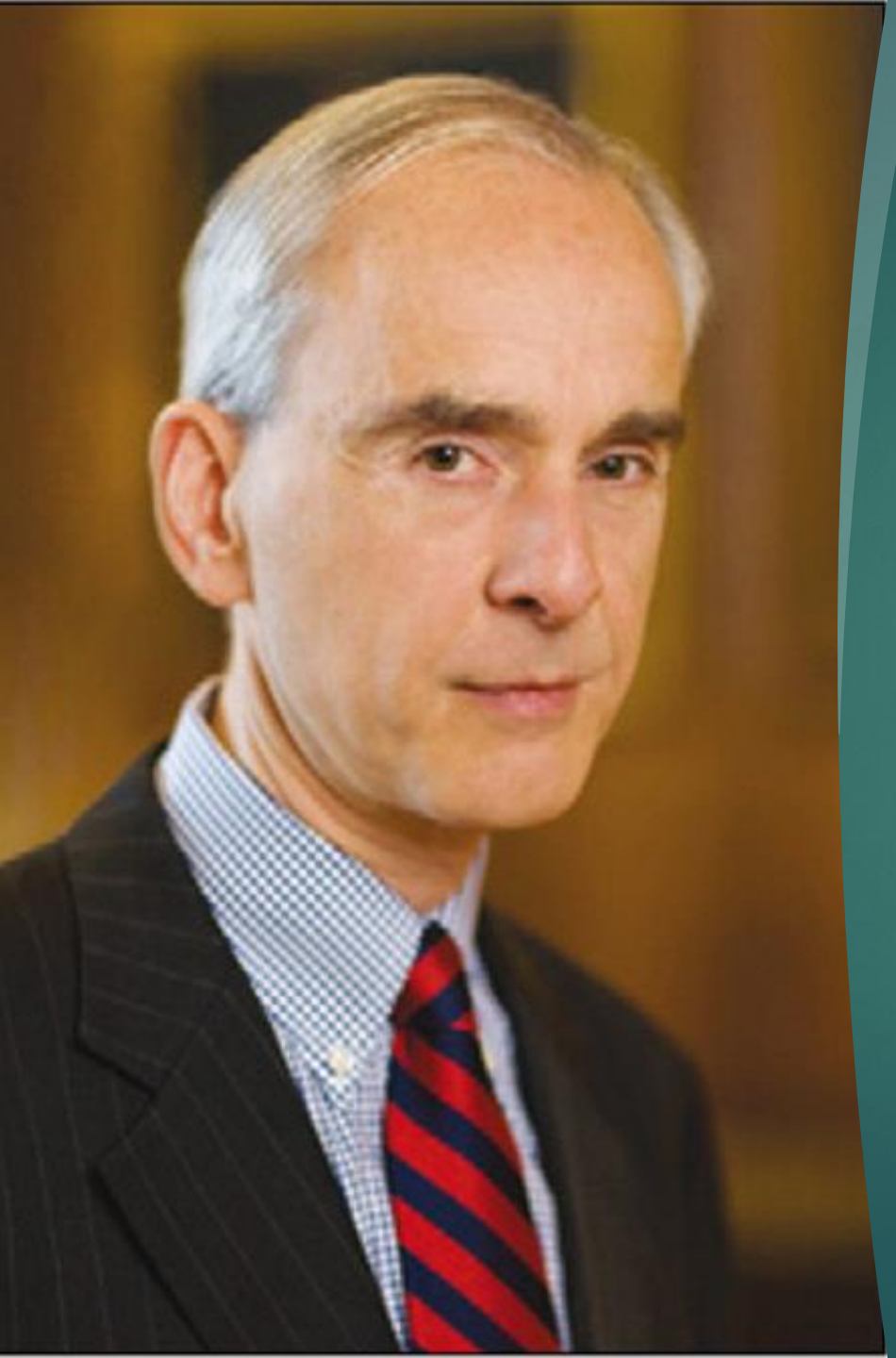
Is organ harvesting before death violating respect for persons and using them as means?

~ "The ethics of donation and transplantations: are definitions of death being distorted for organ transplantation?" Philosophy, Ethics, and Humanities in Medicine 2007



Even transplant proponents like Drs. Miller and Truog write:

…"brain dead" donors remain alive and donors declared dead according to circulatory-respiratory criteria are not known to be dead at the time that their organs are procured.



Eelco F. Wijdicks, MD, PhD, neurocritical care specialist at Mayo Clinic stated in 2006

…the diagnosis of brain death is driven by whether there is a transplantation programme or whether there are transplantation surgeons. I do not think brain death examination now, in practice, would have much if any meaning if it were not for the sake of transplantation.

Nguyen D. Pope John Paul II and the neurological standard for the determination of death: A critical analysis of his address to the Transplantation Society. The Linacre Quarterly 84 (2) 2017, 155–186.

III. “Brain Dead” and Circulatory Death Harvesting are unethical

People ***surviving*** a diagnosis of death are evidence that these redefinitions of death are faulty

“Brain Dead” and Circulatory Death Harvesting are Unethical

IV. The public is being denied truly informed consent when they sign a donor card

Lack of Truly Informed Consent

Dr. Michael Nair-Collins

Ethicist at Florida State University College of Medicine

"Appealing to the good consequences of organ transplantation in an attempt to justify the lack of transparency, if not outright obfuscation on which the transplant enterprise rests, is not a very compelling argument."

Nair-Collins M. The public's right to accurate and transparent information about brain death and organ transplantation. Hastings Center Report, vol. 48, issue 54, Supplement: Defining Death: Organ Transplantation and the Fifty-year Legacy of the Harvard Report on Brain Death, Nov/Dec 2018.

Informed consent at the Department of Motor Vehicles

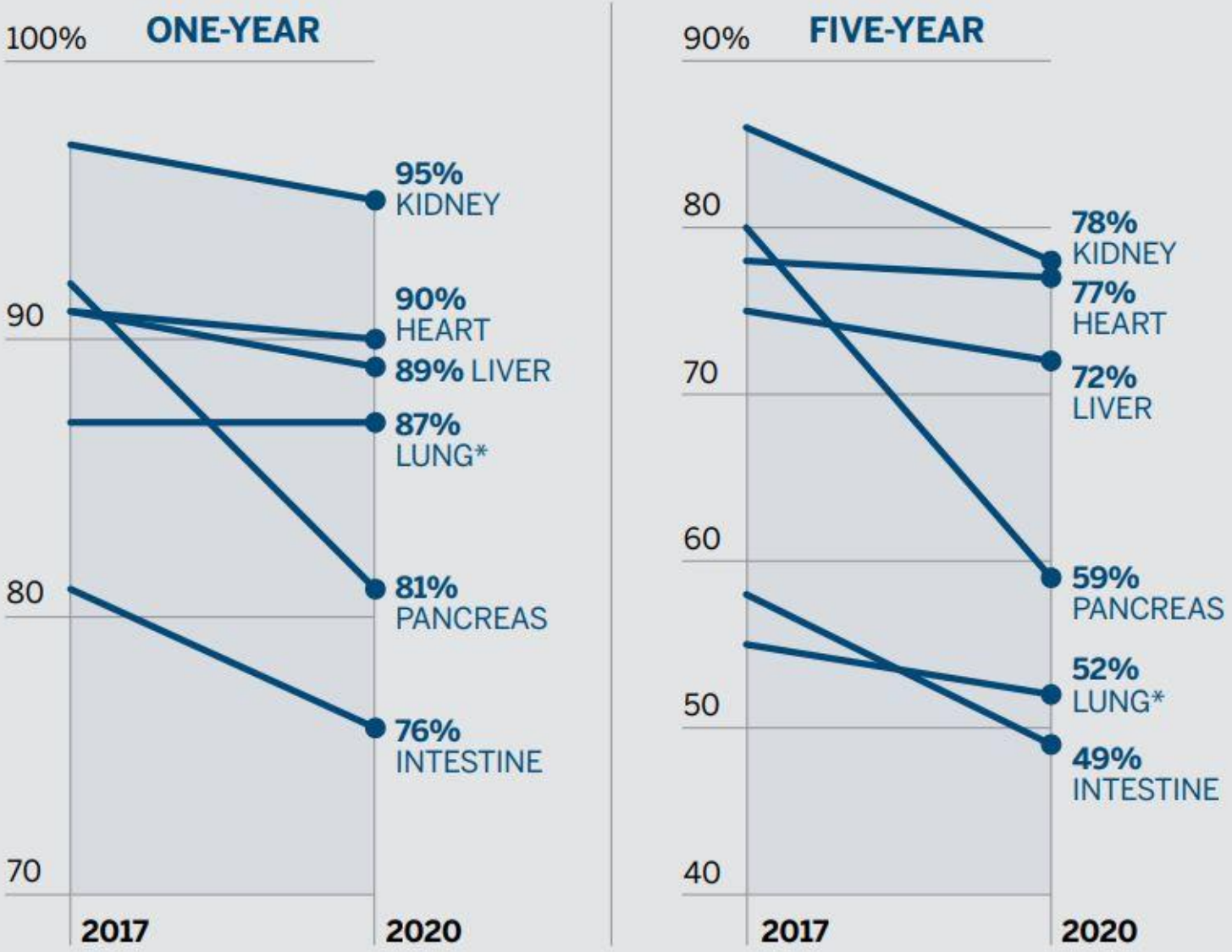
"I'm required to read this informed consent statement prepared by the Surgeon General before you register as an organ donor:

- If you consent to be an organ donor, irrevocable organ procurement policies are set into motion to be sure your desire to be an organ donor will be honored. A legally appointed healthcare surrogate, spouse, or family member cannot stop this process.
- Even though you are declared legally dead, your heart is still beating, your lungs aerate with the help of a ventilator, and your vital body systems continue to function.
- During the surgery to procure your organs, you are not guaranteed anesthesia to treat objective signs of bodily distress (e.g., muscle tensing, heart rate elevations, and blood pressure increases).
- You should also know that some people have recovered with ongoing medical treatment **after** being declared legally dead.

So…do you want to be an organ donor?"

CHANGE IN SURVIVAL RATES

Since our 2017 report, patient survival rates appear to have generally decreased. The decreases shown may be due to volatility arising from small volumes, changes in data or methodology, or other unknown reasons.



Milliman Report 2020

Public perception is that transplant science just keeps getting better, but this is not the case.

What about people who need a heart transplant?

People dying in need of a heart transplant is a tragedy, but it is also a tragedy that living people are being killed by organ harvesting under the UDDA.

If we hadn't been pouring all our research and monetary efforts into the current unethical system, science likely would have come up with safe, ethical solutions by now.

Transplant recipients are also being harmed by the lack of truly informed consent.

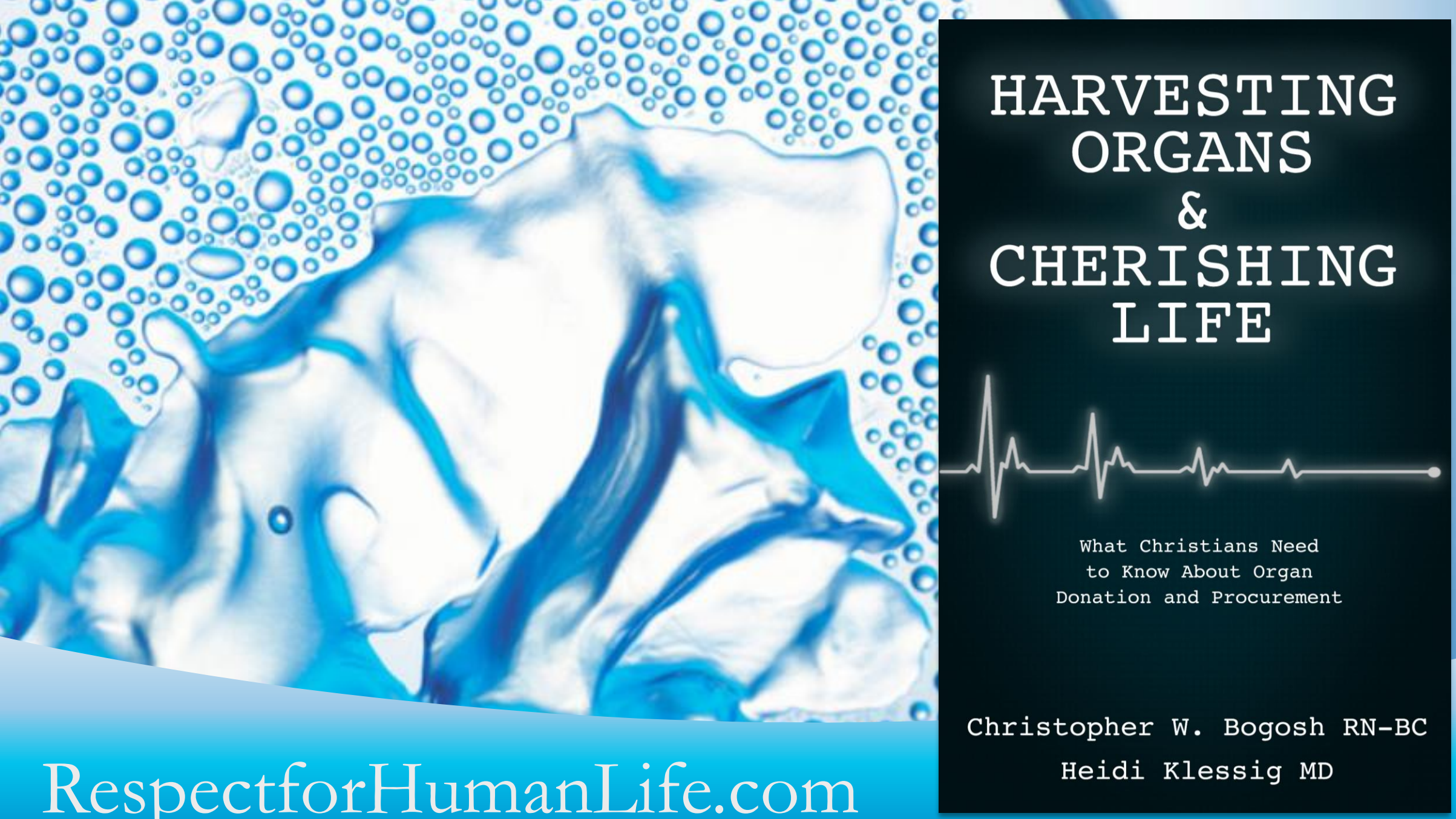
Action Steps

1. Become aware of the updated information on organ harvesting and transplant

2. Educate your patients so they can make truly informed end of life decisions.

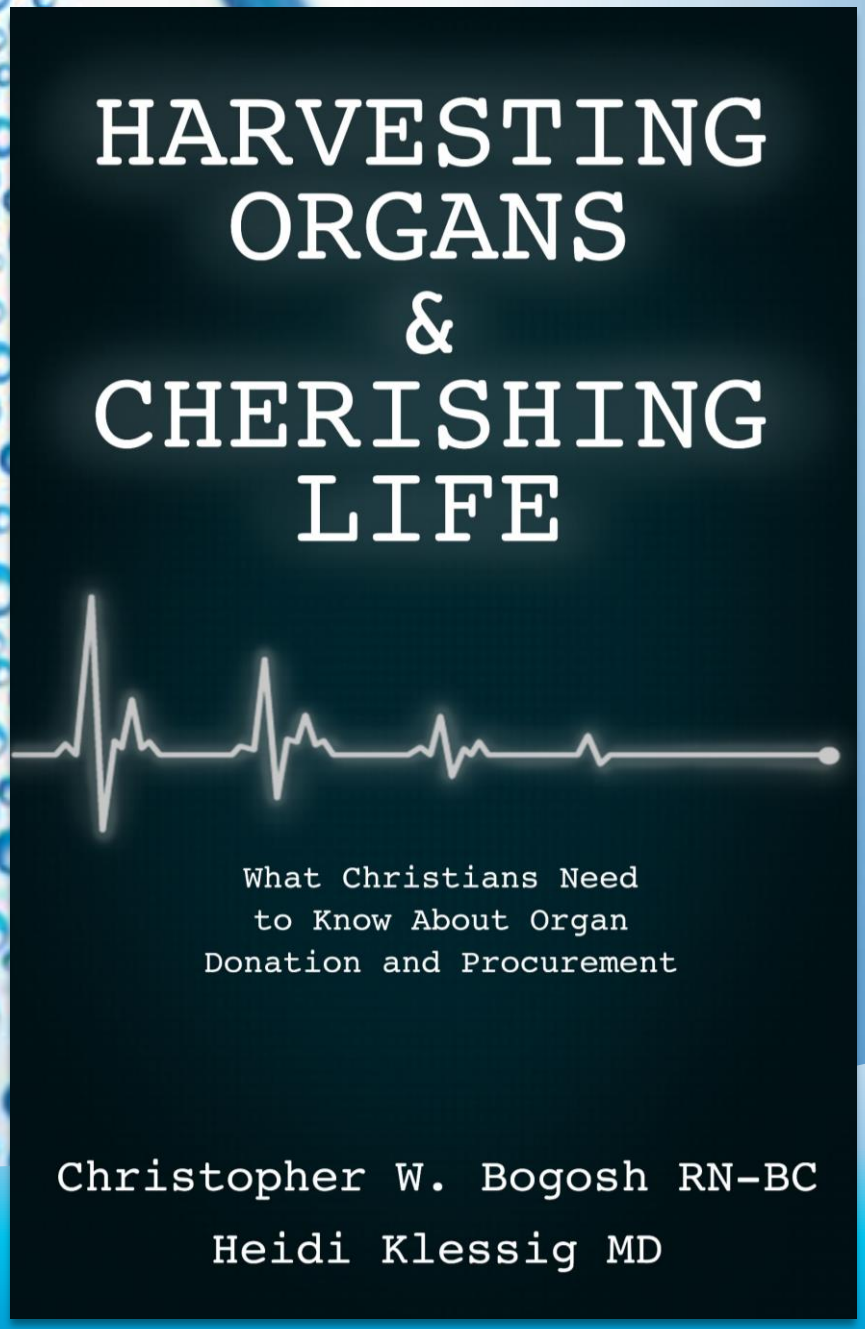
3. Write a letter of expert opinion and recommendations to the Uniform Law Commission opposing the RUDDA and advocating for an opt-out from death determination by neurological criteria

RespectforHumanLife.com



RespectforHumanLife.com

Available on Amazon



RespectforHumanLife.com

Dr. Paul A. Byrne

All members of the human race are created equal and are endowed by their Creator with certain unalienable rights, the foremost of which is the right to life.

Neonatologist
Retired Clinical Professor of Pediatrics at University of Toledo College of Medicine

Life Guardian Foundation
lifeguardianfoundation.org

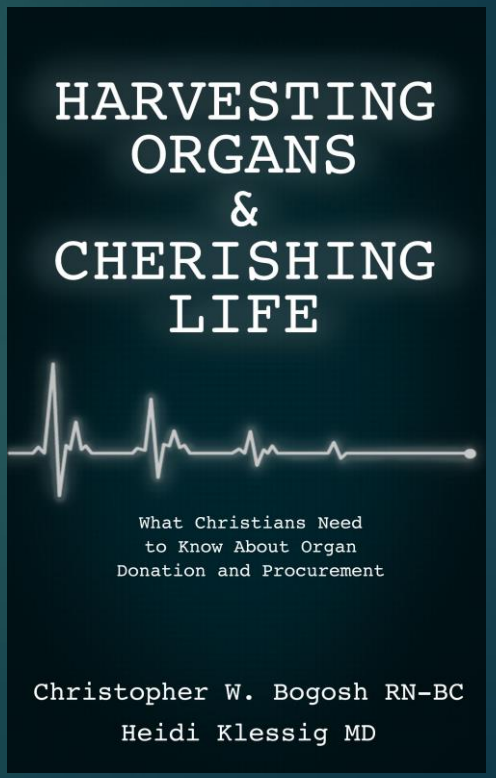
Q&A

Dr. Heidi Klessig

Retired Anesthesiologist &

Pain Management Specialist

Available on Amazon



Author: Harvesting Organs & Cherishing Life

Xenotransplantation

Xenotransplantation

Xenotransplant is the transplantation of organs from other species to humans

- Historically, this has been a failure due to incompatibility and rejection

Recently, an American patient became the first to receive a genetically modified pig heart transplant

- The donor pig had undergone deletion of certain pig genes and insertion of certain human genes to make the organ less likely to be rejected

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- The donor pig had undergone deletion of certain pig genes and insertion of certain human genes to make the organ less likely to be rejected

Sadly, David Bennett Sr. passed away due to complications due to porcine cytomegalovirus from his donor heart.

Will I receive an anesthetic when I donate my organs after “death”?

Review Article/Brief Review |
Published: 26 February 2015

Anesthetic considerations in organ procurement surgery: a narrative review

Considérations anesthésiques pour la chirurgie de prélèvement d'organes: une étude narrative

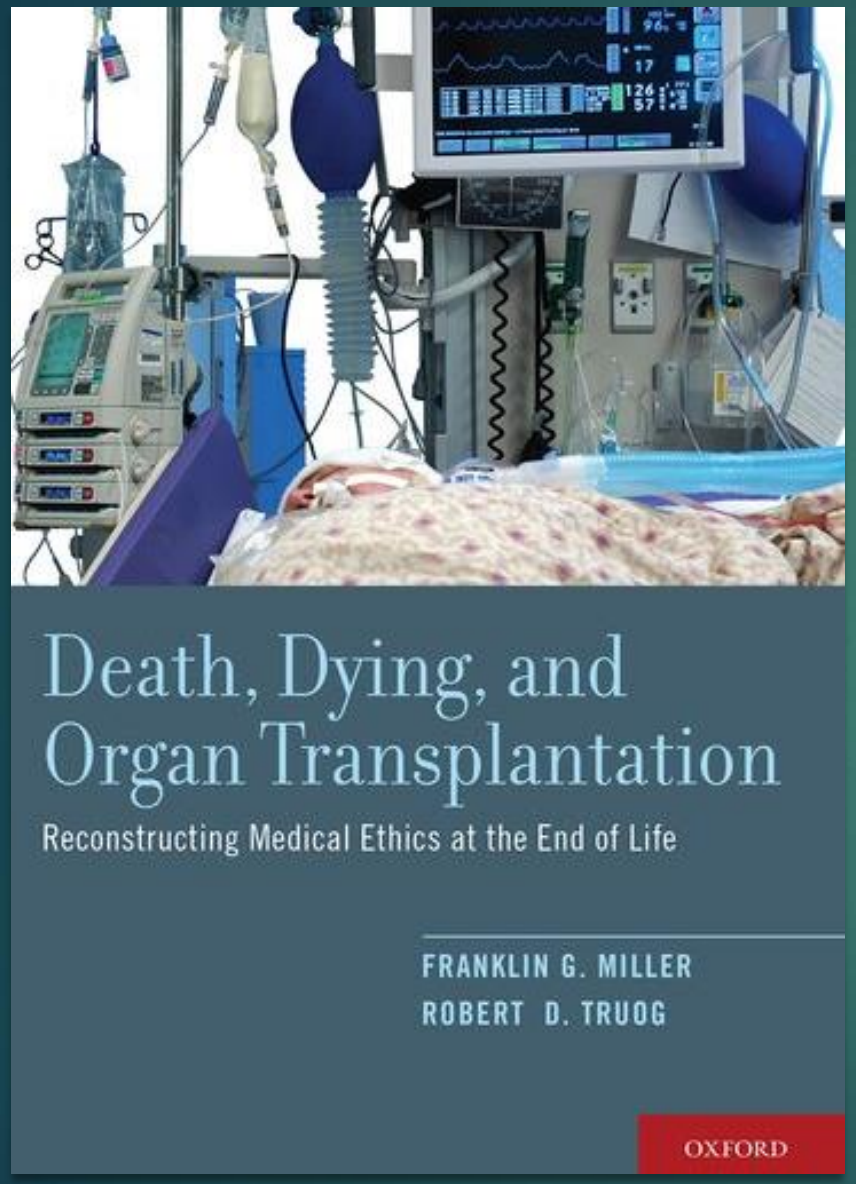
T. Anthony Anderson MD, PhD ✉, Peter Bekker MD & Parsia A. Vagefi MD

Canadian Journal of Anesthesia/Journal canadien d'anesthésie **62**, 529–539 (2015) | Cite this article

This Article Reviews

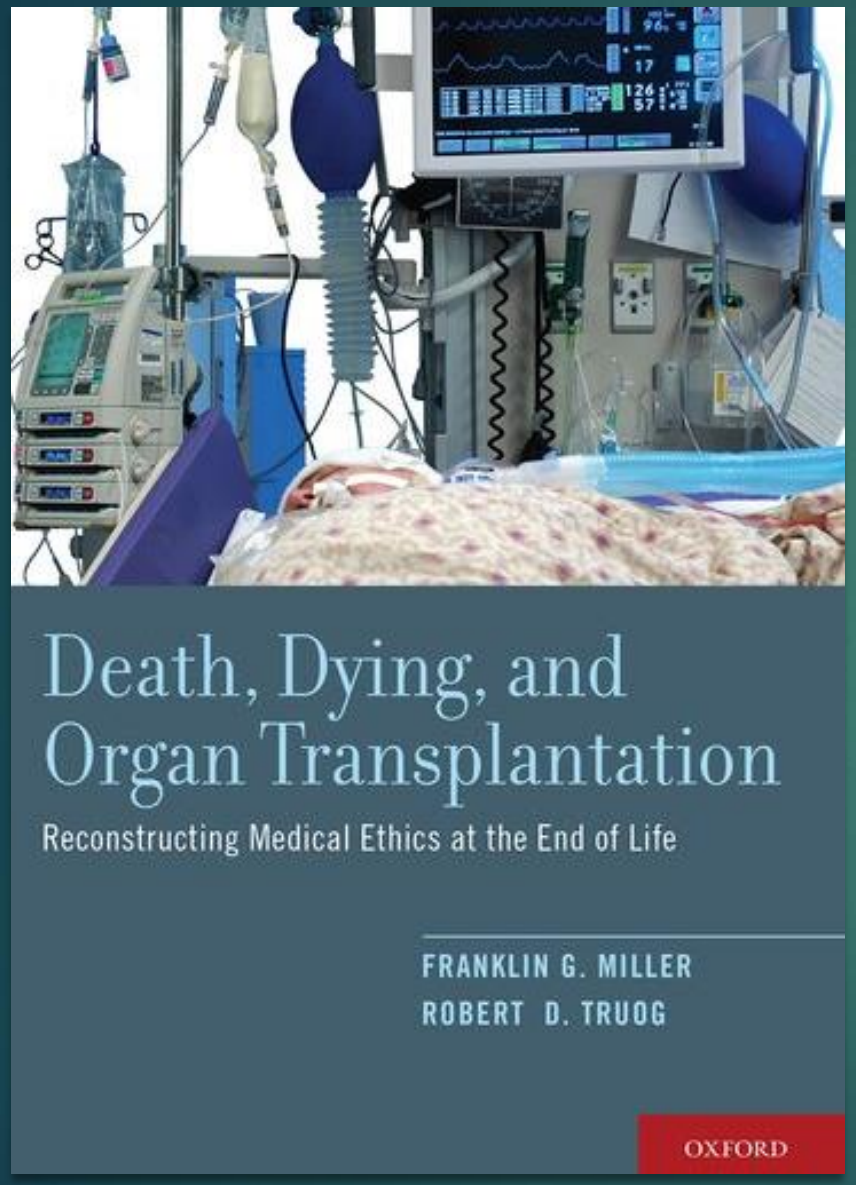
- Blood pressure management
- Fluid management
- Lung protective ventilatory strategy
- Endocrine (hormonal) therapy
- Transfusion to maintain optimal oxygen delivery to the organs
- Neuromuscular blockers to prevent movement during surgery

It Does Not Mention Actual Anesthesia

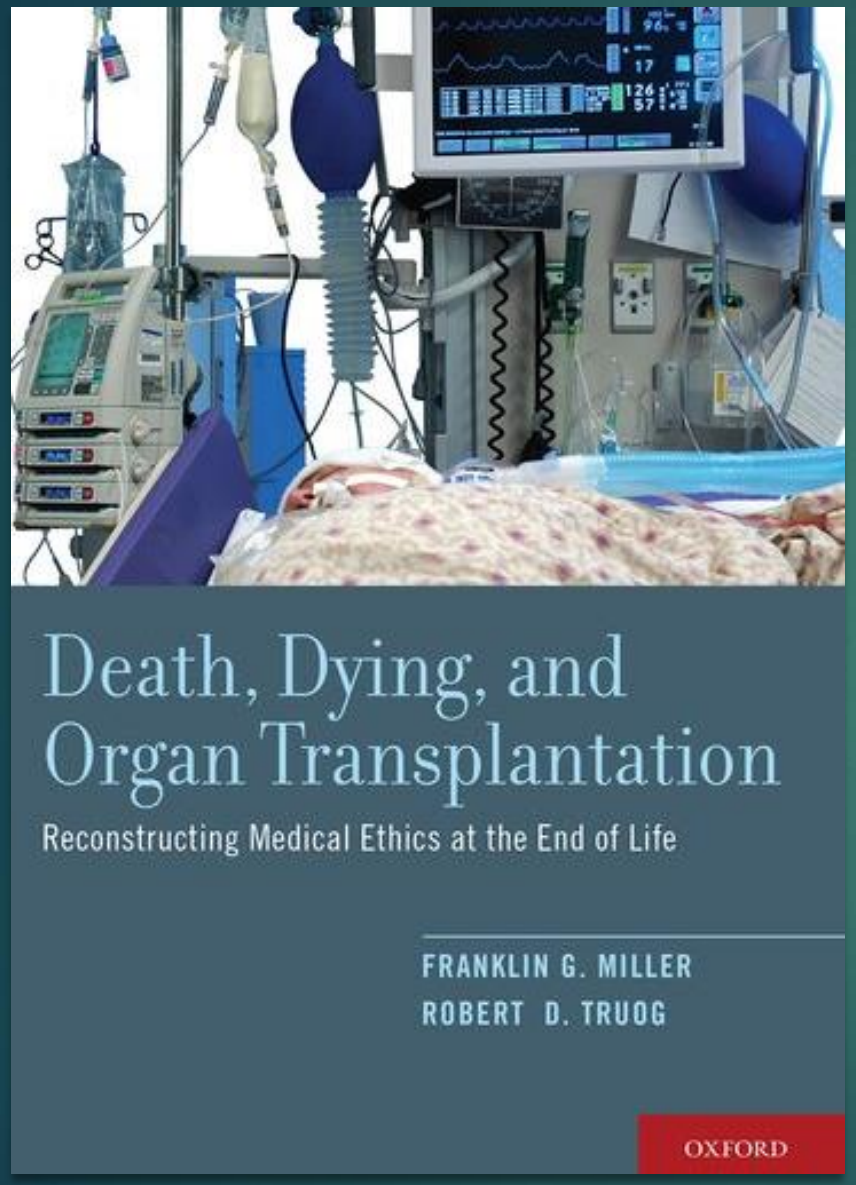


Miller and Truog reviewed the European anesthesia literature debate about whether the "brain dead" donor should be given anesthesia.

They found two responses.



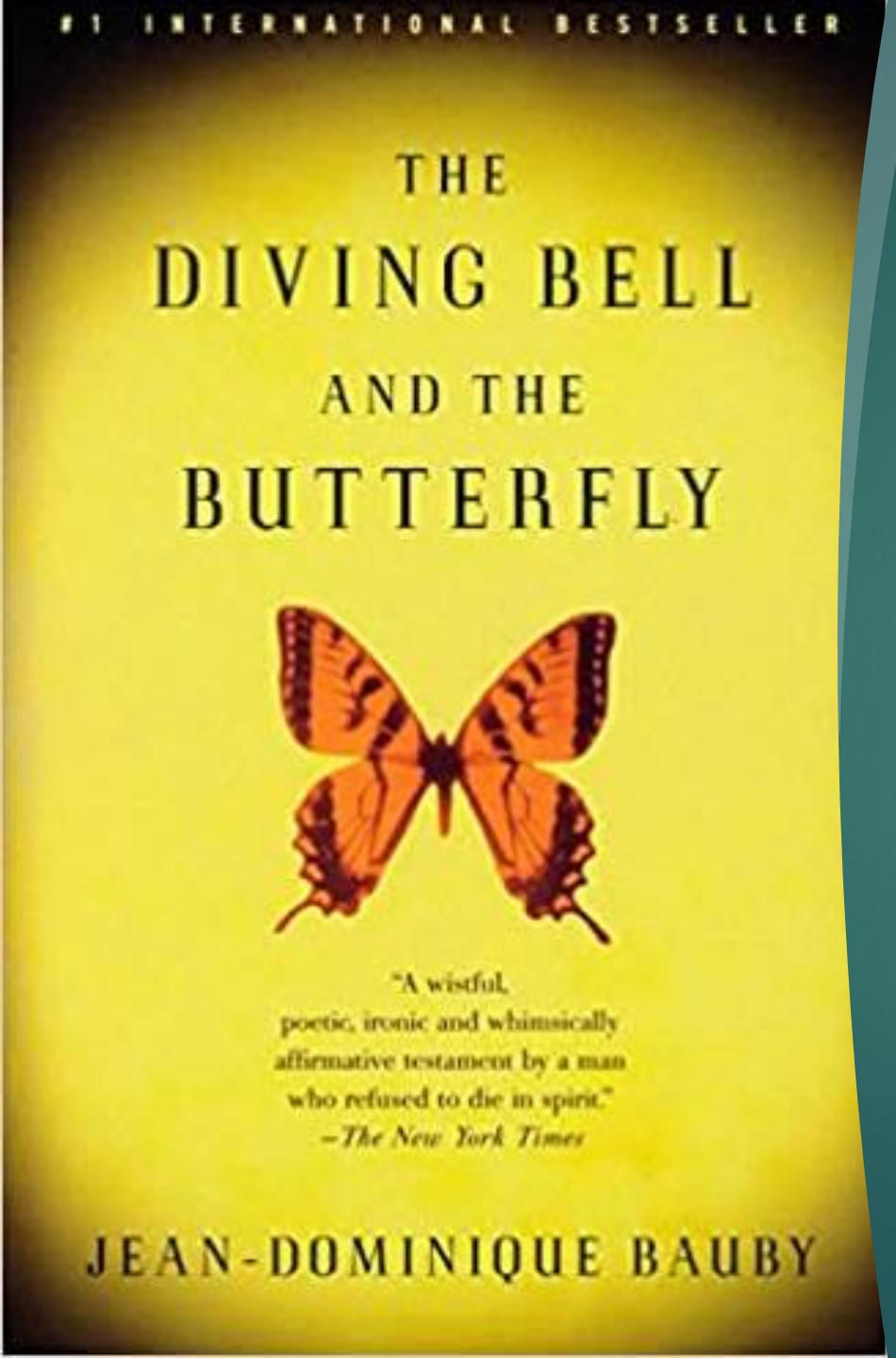
1. Since "brain dead" patients retain some brain functions, we cannot be sure that they don't feel pain during the harvest – blood pressure and heart rate increase with incision. Therefore, an anesthetic should be given to be on the "safe side".



2. "Others disagreed. Surprisingly, their position was not based on the claim that the patients were incapable of experiencing pain. Instead, they were concerned that if the public learned that anesthesiologists were giving an anesthetic to 'dead' patients, it would make them suspicious that the patients were not really dead."

Are doctors good judges of consciousness and quality of life?

- Perhaps because doctors are generally very able themselves, they may fall prey to an able-ist mindset.
- Alarmingly, clinicians misdiagnose patients who have consciousness as unconscious 41-43% of the time.
  - Schnakers C, Vanhaudenhuyse A, Giacino J, Ventura M, Boly M, Majerus S, Moonen G, Laureys S. Diagnostic accuracy of the vegetative and minimally conscious state: clinical consensus versus standardized neurobehavioral assessment. BMC Neurol. 2009 Jul 21;9:35.
- Studies of patients with locked-in syndrome show a majority (72%) are happy, despite their clinicians assuming they "would choose to die if they only knew what the clinicians knew".
  - Bruno MA, Bernheim JL, Ledoux D, Pellas F, Demertzi A, Laureys S. A survey on self-assessed well-being in a cohort of chronic locked-in syndrome patients: happy majority, miserable minority. BMJ Open. 2011 Feb 23;1(1):e000039.
  - Lule D, Zickler K, Hacker S, Bruno MA, Demertzi A, Pellas F, Laureys S, Kubler A. Life can be worth living in locked-in syndrome. 2009 Progress in Brain Research, 177, p. 339-351.
- Doctors must be aware of their biases when assisting patients with end-of-life decisions.



The Diving Bell and the Butterfly

The Apnea Test

The patient is disconnected from the ventilator (while oxygen is insufflated) for up to 10 minutes and observed for breathing.

- Increasing pCO2 causes increased intracranial pressure and worsening cerebral blood flow, which may increase brain damage.
- The test does absolutely *nothing* for the patient, it only benefits unspecified "others" who might want his organs.

Shewmon DA. Statement in Support of Revising the Uniform Determination of Death Act and in Opposition to a Proposed Revision. J Med Philos. 2021 May 14:jhab014.

The current draft of the proposed RUDDA *includes accommodation language*

A health-care institution shall adopt a policy in a record that sets forth the reasonable efforts it will make to accommodate (the personal) objections by the individual to a determination of death pursuant to Section 3(2) *(The neurologic death criteria).* Any such objections must be expressed in the individual's medical records or through information provided to the health-care institution by an individual's surrogate.

(1) The policy shall allow the individual to choose that a determination of death of the individual be made solely pursuant to Section 3(1). *(The circulatory death criteria)*

(2) The policy shall provide that any objections be made before beginning the clinical evaluation for the determination of death pursuant to Section 3(2) must be made *before* beginning that determination.

Neuropathology of "Brain Death"

National Institute of Neurologic Diseases and Stroke Collaborative Study 1970-72

Of 226 brains autopsied, only 40% showed "respirator brain"/ischemic total brain infarction

Wijdicks et al. 2008 retrospective study of 41 brains showed varying decrees of neuronal ischemic changes (from normal-appearing brain tissue to diffuse changes found microscopically in the brain).

There were NO cases of "respirator brain" with extensive ischemic neuronal loss.

The National Institute of Neurologic Diseases and Stroke Collaborative Study of Brain Death. NINCDS Monograph No. 24. US Dept. of Health and Human Services, Public Health Service, National Institutes of Health, National Institute of Neurological and Communicative Disorders and Stroke. Bethesda, Maryland 20205. /Wijdicks EFM, Pfeifer EA. Neuropathology of Brain Death in the Modern Transplant Era. Neurology 70, no. 15 (2008).