Organ Donation: A Call for Greater Palliative Care Involvement

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How I Became Interested....

- Founding at a mid-sized company
- Traum East Bay
- No prior donations
  - Human
...and Remain Committed

San Francisco General Hospital & Trauma Center
- Public hospital and safety net provider for residents of San Francisco
  - City’s only Level I trauma center
  - Awarded nation’s first Joint Commission Traumatic Brain Injury Certification as a Center of Excellence
- 72% of all charity care in San Francisco
- Second most ethnically diverse medical center in US

Supportive & Palliative Care Service
- Inpatient palliative care program launched December 2009
- California HealthCare Foundation: *Spreading Palliative Care in Public Hospital Initiative*
Case #1: Not the 11th Hour...but 11:59

- 57 y/o man in MVA and arrived to hospital with very poor neurologic exam and clinically deteriorated to brain death quickly after arrival

- Trauma team calling to give a heads up since the CTDN representative suggested considering a palliative care referral as helpful in donor cases

- Patient already in the OR

- Family had been present, but have since left the hospital with no plans to return
Questions

- What are the standards for palliative care involvement in the organ donation process?
- When should PC ideally become involved?
- Anecdotally, it feels this would be an opportunity for PC to benefit the situation, but is there evidence of need or documented benefit?
Case #2: Potential Opportunity

- 51 y/o African-American man, HTN with VT/VF cardiac arrest, 20 min pulseless in field with resuscitation attempts. STEMI on admission and s/p 1 DES LCx, cooling protocol, but with very poor neurologic function and surrogates have decided to withdraw ventilatory support once more family arrives over the weekend.

- Cardiology resident calls Friday night for a “heads-up” consult regarding assistance with transition to comfort care.
Case # 2: Potential Opportunity

- In assessing the patient, you recognize he is on high vent settings with rare overbreathing and pressor support. You ask the team whether he has been considered as a DCD candidate and whether the CTDN has been notified.

- The resident is not sure what a DCD candidate is and that organ donation had not been discussed by the team.

- Team calls the CTDN who assesses the patient and determines he would not be a viable DCD candidate.

- Patient subsequently extubated and transitioned to a comfort care suite and dies comfortably a day after extubation.
Questions

- What are the obligations, if any, for referring potential patients for organ donation?
- Are there tools or other means of determining who might be a viable DCD candidate?
- If a medical team is considering organ donation, what is the best way of proceeding with the discussion with the surrogates?
Case #3: Involved in a DCD Case

- 20 y/o man ingests hallucinogenic mushrooms and falls 40’ from his apartment patio. Suffered severe TBI as well as multiple rib fxs, bilateral PTX, spinal fractures, splenic laceration. Underwent emergent hemicraniotomy with EVD placed, but despite aggressive support for days very poor neurologic exam persists.

- Father and mother fly in from the Southeast and there is some discord with the patient’s girlfriend

- Neurosurgery consults palliative care to help with goals of care delineation and family support
Case #3: Involved in a DCD Case

- Son had recently left home and college and moved out to San Francisco with his girlfriend.
- Father and mother intent on pursuing organ donation despite objections from the girlfriend.
- Successful DCD donation pursued over the weekend.
  - Given extensive trauma one kidney recovered and successfully donated.
- Parents return a year later to spread his ashes in the Pacific Ocean and contact SPCS chaplain.
  - Successful donation remains a very positive aspect from this tragedy.
Questions

- What is known about the experience of families or surrogates in the setting of potential organ donation?
- Is there evidence that palliative care involvement influences the process?
- Are there examples or standards for how palliative care programs are integrated into the DCD process?
26 y/o Phillipino man is admitted after “car surfing” and a fall off the car when it stops short. He is admitted with very severe TBI and despite aggressive intervention deteriorates to brain death.

- Family cite the recent case at Children’s Hospital in Oakland as a reason to question a diagnosis of brain death.
- Initially threaten notifying the media if attempts are made to discontinue supportive interventions.

Neurosurgery calls for a palliative care consult to assist with goals of care discussion.
Questions

- Is the future of brain death as a diagnosis of death in question given this recent case?

- Have there been ramifications from the Children Oakland case on the rate of organ donation in California?
Hopes for Today

- Quick review of history of organ donation in US
- Define types of potential organ donors and review different processes for donation
- Review potential palliative care needs in patients’ surrogates undergoing this experience
- Explore current status of palliative care involvement in the process of deceased organ donation and recommended best practices
Brief History of Organ Donation in the US
Organ Donation in the US

- Evolved over past 40 years as optimal therapy for many patients with end organ disease

- Potential donors
  - Living
  - Deceased – “Brain Dead” donors or “Non-beating heart” / “Donation after Circulatory Death (DCD)” donors
    - “Non-Beating Heart” donation initially pursued then abandoned 1960’s
    - 1993 University of Pittsburgh responsible for reintroducing DCD method for donation

Kelso 2007, Prommer 2014
Potential Deceased Donor Candidates

- Donation after Brain Death
- Donation after Circulatory Death (DCD)
  - Controlled – After decision to discontinue life-sustaining therapy
  - Uncontrolled – After failed cardiac resuscitation
Organ Donation in the US

- 2003 US Department of Health and Human Services launched Organ Donation Breakthrough Collaborative

  - Objective of increasing access to transplantable organs
    - Expanded donor assessment/DCD, clinical triggers, education, increase support critical care staff and families, increased guidelines and protocols, oversight committees

  - Mixed results with
    - Improved conversion rates
    - Increased organs transplanted per donor

Davis 2013, Saidi 2014
Organ Donation in the US

- **Last decade**
  - Wait list 18,000 to more than 100,000
  - Number of organs transplanted annually increased from 13,000 to 28,000
  - ~18 patients per day die awaiting an organ

- **Past 10 years number of deceased organ donors increased modestly with DCD donation increasing 10 fold**
  - 2002 – 189 DCD Donors
  - 2009 > 900 DCD Donors

Davis 2013, Saidi 2014
Organ Donation Trends
US Compared with Other Countries

- Comparison of DCD protocols and strategies in 10 European countries

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<thead>
<tr>
<th>Country</th>
<th>DCD Protocol</th>
<th>Strategies</th>
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<tbody>
<tr>
<td>United States</td>
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<td>Europe</td>
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Wind 2013
Types of Donors and Deceased Donor Donation
Brain Death Donation

- Patient must have an irreversible injury to the central nervous system with known mechanism of injury.
- Neurological assessment performed without alteration to other organ system function.

- No sedating medications
- Normal core body temperature
- Normal blood pressure
- Normal oxygenation
- No major electrolyte abnormalities
Brain Death Donation

Exam

- No movement to sustained noxious stimuli
- Fixed and dilated pupils
- Absence of reflexes: Corneal, Oculocephalic, Oculovestibular, Gag, Cough
- Absence of respiratory effort – Confirmed with Apnea Test

Clinical diagnosis: Death declared based on NO evidence of central nervous system function

Optional supportive clinical testing
- EEG, Cerebral blood flow study
In California, 2 separate licensed MD’s declare brain death

Discussion treating MDs, OPO, surrogates to gain approval for organ donation *

Testing to determine viable organs/tissue and potential recipients identified

Extensive medical support provided in order to optimize organs for donation

Patient is taken to OR (of current hospital or designated hospital) for organ procurement

*With brain death declaration and consent to donate, OPO assumes care and cost from this point forward
Donation after Circulatory Death

- Death declared based on cardiopulmonary criteria
  - Vast majority (>95%) have a catastrophic brain injury resulting in terminal condition which does not meet clinical brain death
  - More rarely (<5%) may have other conditions such as ALS, high cervical injury
  - Inadequate respiratory effort to maintain adequate oxygenation and/or other system failure resulting in ventilatory dependence
  - In order for organs to be a viable, death must occur within warm ischemic time
Process for Controlled DCD Donation

Patient meets criteria to be a potential DCD donor

Discussion treating MDs, OPO, surrogates to gain approval for organ donation *

Testing to determine viable organs/tissue and potential recipients identified

Life-sustaining treatments discontinued (location [OR/ICU] facility dependent)

Medications provided to ease EOL symptoms and prep for possible procurement

Death occurs within Warm Ischemic Time (60-120 minutes)  
Death does not occur within Warm Ischemic Time

Surrogates leave patient and organ procurement team arrives  
Patient transferred out of OR/ICU to routine in-hospital comfort care

* Once decision made to withdraw life sustaining measures and donate, all care and expenses are assumed by OPO
Brain Dead vs. DCD Donation

Courtesy CTDN, Neidlinger
## Possible Organ and Tissue Donation

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<thead>
<tr>
<th>Solid Organs</th>
<th>Brain Death Donors</th>
<th>DCD Donors</th>
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<tr>
<td>Heart</td>
<td>Less than 60 minutes warm ischemic time*</td>
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Wind 2012
Predicting Viability for DCD

- University of Wisconsin Tool
- Requires discontinuation of ventilatory support for 10 minutes

Lewis 2003; Prommer 2014