The Respiratory Therapist’s Role in Organ Donation

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Midwest Transplant Network

- Organ & Tissue Procurement
- Professional Education
- Donor Family Aftercare
- Community Education
- 24 hour Call Center

Register to be a donor at mwtn.org
CMS Conditions of Participation

- Hospitals must have an agreement with their designated Organ Procurement Organization (OPO)
- An agreement with at least one tissue and one eye procurement organization
- All deaths will be referred to MTN for screening
- All families of potential donors will be offered the opportunity to donate appropriate organs/tissues
- Only Trained Requestors may request donation

Register to be a donor at mwtn.org
Potential Organ Donors

• Referrals from the Hospital ICU and the ED
  ✓ Age 0-80
• Imminent Death Criteria
  ✓ GCS of 5 or less, Vented, known or suspected neurological injury
• 24/7 call Center
  ✓ Basic Screening
Organ Donors

Brain Dead Donor

🌟 Transplantable Organs

- Heart
- Lungs
- Pancreas
- Liver
- Kidney
- Intestine

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Death by Neurological Criteria (Brain Death) Pronouncement

• Must be done by a licensed physician, according to acceptable medical standards

• According to hospital policy
  Resident? Timeframes? Patient condition?

• It is the patient’s legal time of death
Onsite Evaluation

• Brain Death testing
  – Clinical
    • Must have cause of death
    • Absence of brainstem reflexes
    • Pupils
    • Ocular movement
    • Facial Sensation
    • Tracheal & pharyngeal reflexes
    • Coma
    • Apnea
Onsite Evaluation

• Apnea testing
  – pH 7.35-7.45
  – PCO2 35-45
  – Pre-oxygenate
  – Remove vent
    • Use T-piece with 6L blow by
    • Cut NC can cause tension pneumothorax
  – Monitor for respiratory effort for 8-12 minutes
  – Check ABG prior to connection of vent
  – Looking for a rise in PCO2 of >20 from baseline and >60

• Time of death by neurological criteria
  – Time on the death certificate
Vent Management

- Initial consultation with RT
  - 10 minutes of “playing” to get the right settings
  - Modified SALT
    - PC, IP 25 and wean to achieve 8ml/kg TV IBW
    - Switch to AC/VC+ after recruitment
    - Recruitment maneuvers: 40x40
- Minimal vent settings
  - AC/VC+, 40%, PEEP 8
- O2 Challenge
  - ABGs on 40% & 100%
  - PFR
- Patient positioning
  - Prone

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Organ Donors

Donor after Circulatory Death

🌟 Transplantable Organs

Kidney
Liver
Pancreas
Donation after Circulatory Death (DCD)

- Patient is not brain dead, but has significant brain injury
- Physicians determine nothing more can be done
- Family has made the decision for comfort care to allow natural death
- Eligibility dependent on age and PMH
- DCD tool to determine likelihood of patient passing within 60 minutes
- Organ donation occurs after cardiac death declared

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Ethical Cornerstones

• Family must make the decision to shift to comfort measures PRIOR to any discussion of donation
• Hospital physician orders all comfort measures per hospital protocol
• MTN/transplant physicians are not involved in the pronouncement of death
DCD Assessment

- Neuro assessment
- Vital signs, stability
- Vent support
- PIP with cuff inflated and deflated, check for air leak
- CPAP trial
- Possible T-piece trial
### Demographics

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<th>Family Status:</th>
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<tr>
<td>UNOS:</td>
<td>M</td>
<td>Gender:</td>
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<td>parents</td>
</tr>
<tr>
<td>Hi:</td>
<td>70</td>
<td>Wt:</td>
<td>70</td>
<td>PACEMAKER: Yes or No?</td>
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<tr>
<td>Neuro Injury:</td>
<td>S/P hanging, anoxia</td>
<td>CT-impression:</td>
<td>Generalized cerebral</td>
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### Neuro Injury

- S/P hanging, anoxia

### Down Time

- 10-15 minutes hanging, 8 min CPR

### Evaluation

<table>
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<tr>
<th>Date/Time-</th>
<th>Describe assessment</th>
<th>Onsite</th>
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#### Neurologic Assessment

- OBV: 0 = yes, 1 = n/n (pCO2 > 40)
- Pupil: 0 = marginal
- Cough: 0 = absent
- Gag: 0
- Pain: 0
- Tongue: Movm't/Biting: 0
- Posturing: 0
- Swallow: 0
- Corneal: 0

#### Metabolic Data

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<tr>
<th>BMI</th>
<th>Total #/6 =</th>
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<tr>
<td>wt (kg)</td>
<td>Total #/6 =&gt;</td>
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</tr>
<tr>
<td>Ht (meters)</td>
<td>in = 0.0254 m</td>
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</tbody>
</table>

#### Vitals During CPAP trial

- Respiratory rate: 0 = regular, 1 = <12 or >24, 2 = 8 or >30
- CPAP: AVG TV after 10 min: 0 = >4 ml/kg, 1 = >2 ml/kg, 2 = <2 ml/kg
- CPAP: PIP with ET Cuff Deflated: 0 = <10, 1 = 11-17, 2 = >18
- CPAP: PIP with ET Cuff Inflated: 0 = 11-17, 2 = >18

#### Evaluation Score

- CPAP: Respiratory rate: 0 = regular, 1 = <12 or >24, 2 = 8 or >30
- CPAP: AVG TV after 10 min: 0 = >4 ml/kg, 1 = >2 ml/kg, 2 = <2 ml/kg
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#### If stable during CPAP discuss with AOC regarding room air exam.

- Total Score: 2

#### Description

- Document how pt tolerated CPAP: stable, strong spont cough, shoulders up off bed, opens eyes

### Extubation

- 3/21/13 1229
- Total Time: 148 min
Transferring the Patient

- EKG electrodes moved to patient’s back
- Patient placed on transport monitor
- Continue all drips and medications
- RT travels with patient on vent to location for extubation
Preventing for Extubation

MTN will coordinate timing for extubation
  Pronouncing physician and family are in place and ready
  Recovery surgeons, preservationists and nurses must be scrubbed
  and in the operating room ready to receive patient

Consideration for extubation
  Suction Availability
  Extra Towels
  Tactful extubation/shielded for family comfort
  Move vent away from bed/does not need to be removed from room
Once Patient is Pronounced

• Patient transferred to Operating Room
  Patient Identification: Check ID Band
  Positioning: Supine with both arms tucked
  Prepping/Draping: Drape for incision (sternal notch to pubis), prep chin to mid-thigh
• 5 minutes after pronouncement, TIME OUT done, pulse checked by 1 MTN staff, 1 hospital staff and recovery surgeon
• Incision made with about 3-7 minutes of dissection before cold perfusion started
• Remaining dissection done after organs are perfused
Why the big Rush?

• Minimize cell death due to lack of 02
• Very little initial dissection
• Quick cool down and flush with preservation solution
• Best possible outcome for recipients

Register to be a donor at mwttn.org
DCD Differences in OR setup

- No Anesthesia personnel for liver and kidney donation
- No cautery used
- Limited instrumentation
- Slush is needed immediately
- More MTN staff present for transfer and assistance
Case Study

• 61yr old /female
• Unresponsive
• Intubated in the ED
• MRI showed bilateral infarcts
• Pronounced brain dead at 1840
• Authorization at 1900
• Basic vent settings
  AC/VC, f-8, PEEP 5, FiO2 40%
• Pre Apnea
  7.43/34/292
• Post Apnea
  7.21/74/318
• No respiratory effort after 10 minutes
MTN vent changes

• Vent Changes
  AC/VC+, PEEP 8, rate & volume for ABG
• Recruitment Maneuvers
  Use cautiously, may cause instability
  40x40
• Pronation
  360 protocol
Additional Testing

• CT chest: Mild interstitial edema, mild basilar atelectasis
• Bronchoscopy: Normal, minimal secretions
• CXR: Minimal atelectasis
**Outcome**

- Liver recovered, but discarded due to biopsy results
- Bilateral kidneys recovered, but discarded due to biopsy results

- Bilateral lungs recovered and transplanted into a 51-year-old male!!!
Did I forget to mention

• Donor was a 1-1 ½ pack per day smoker for 47 years!!!!!!!
Other Considerations

• Donation is at no cost to the family
• Should not impede funeral arrangements
• Donation may occur even if the ME or family requests an autopsy
• The gift is precious and therefore must be recovered in a timely manner
• Complete process takes several hours
• Follow-up care provided for donor families
Kansas Registry

• [www.donatelifekansas.com](http://www.donatelifekansas.com)

• With renewal of Driver’s license

Register to be a donor at [mwttn.org](http://mwttn.org)
Questions ???

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