Respiratory Care and Organ Donation

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Midwest Transplant Network

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- CMS requires every accredited hospital to have an agreement with an OPO.
- MTN is the first independent OPO in 1973.
  - Celebrating our 40th year anniversary!!
- 58 OPOs nation wide.
- Service area is the state of Kansas and western 2/3 of Missouri.
  - Main office in KC.
  - Satellite offices in Wichita and Columbia, MO

Why?

- United Network for Organ Sharing (UNOS)
- National waiting list for life saving organs
  - As of 4/10/13: 117,725
  - Lung list: 1,682
  - Heart/Lung list: 49
  - A new name is added every 12 minutes
  - 18 people die every day waiting on the list

MTN and Lungs

- We are not associated with a lung transplant center.
- 2011: 102 lungs transplanted!
- 2012: 85 lungs transplanted!

Potential Donors

- Referrals come from Hospital ICUs and EDs
  - Age 0-80
- Imminent Death Criteria
  - GCS of 5 or less, Vented, known or suspected neuro injury
- 24/7 call center
  - Basic Screening
- Organ Procurement Coordinator
  - More in depth screening
  - Patient assessment
  - Plan of care

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, cont

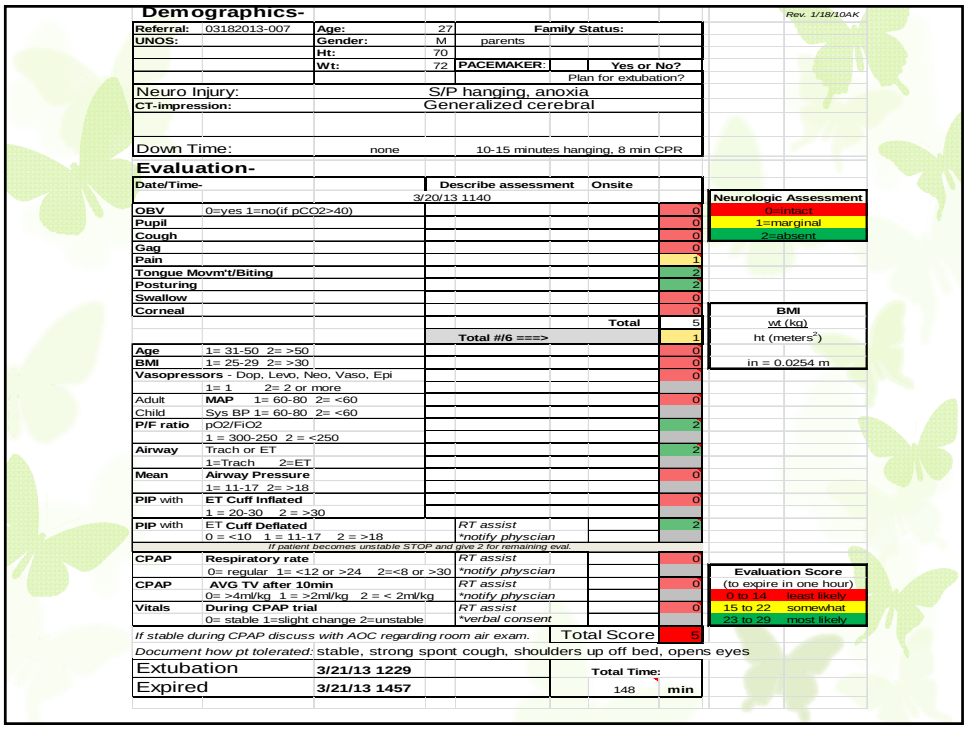
- Apnea testing
  - pH 7.35-7.45
  - PCO2 35-45
  - Pre-oxygenate
  - Remove vent
    - Use T-piece with 6L blow by
    - Cut NC can cause tension pneumothorax
  - Monitor for resp effort for 8-12 minutes
  - Check ABG prior to connection of vent
  - Looking for a rise in PCO2 of >20 from baseline and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

Donation after Circulatory Death (DCD)

- Patient is not brain dead, but has significant brain injury
- 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

DCD, cont.

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



Demographics-

Rev. 1/18/10AK

Referral:	03182013-007	**Age:**	27	**Family Status:**	
UNOS:		**Gender:**	M	parents	
		Ht:	70		
		Wt:	72	**PACEMAKER:**	**Yes or No?**
					Plan for extubation?
Neuro Injury:			S/P hanging, anoxia		
CT-impression:			Generalized cerebral		
Down Time:		none		10-15 minutes hanging, 8 min CPR	

Evaluation-

Date/Time-		**Describe assessment**	**Onsite**	
		3/20/13 1140		
OBV	0=yes 1=no(if pCO2>40)			0
Pupil				0
Cough				0
Gag				0
Pain				1
Tongue Movm't/Biting				2
Posturing				2
Swallow				0
Corneal				0
			Total	5
		Total #/6 ===>		1
Age	1= 31-50 2= >50			0
BMI	1= 25-29 2= >30			0
Vasopressors	- Dop, Levo, Neo, Vaso, Epi			0
	1= 1 2= 2 or more			
Adult	**MAP** 1= 60-80 2= <60			0
Child	Sys BP 1= 60-80 2= <60			
P/F ratio	pO2/FiO2			2
	1 = 300-250 2 = <250			
Airway	Trach or ET			2
	1=Trach 2=ET			
Mean	**Airway Pressure**			0
	1= 11-17 2= >18			
PIP with	**ET Cuff Inflated**			0
	1 = 20-30 2 = >30			
PIP with	ET **Cuff Deflated**	*RT assist*		2
	0 = <10 1 = 11-17 2 = >18	**notify physcian*		
	If patient becomes unstable STOP and give 2 for remaining eval.			
CPAP	**Respiratory rate**	*RT assist*		0
	0= regular 1= <12 or >24 2=<8 or >30	**notify physcian*		
CPAP	**AVG TV after 10min**	*RT assist*		0
	0= >4ml/kg 1 = >2ml/kg 2 = < 2ml/kg	**notify physcian*		
Vitals	**During CPAP trial**	*RT assist*		0
	0= stable 1=slight change 2=unstable	**verbal consent*		
			Total Score	5

If stable during CPAP discuss with AOC regarding room air exam.

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

Extubation	**3/21/13 1229**	**Total Time:**	
Expired	**3/21/13 1457**	148	**min**

Neurologic Assessment
0=intact
1=marginal
2=absent

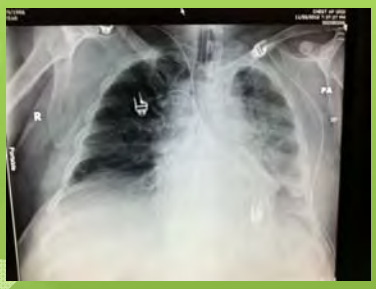
BMI	
wt (kg)	
ht (meters^2)	
in = 0.0254 m	

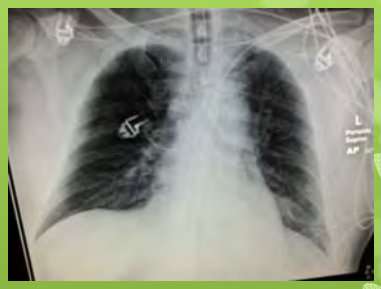
Evaluation Score (to expire in one hour)	
0 to 14	least likely
15 to 22	somewhat
23 to 29	most likely

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

Aggressive recruitment





Case Study

- 61/F
- 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/M!!!!

Did I forget to mention…

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

Questions…

- Resources and Links:
  - www.UNOS.org
  - www.OPTN.org
  - www.donatelifekansas.com
  - www.donatelifemissouri.com