

Execution by Organ Procurement: Breaching the dead donor rule in China

Matthew P. Robertson and Jacob Lavee

April 04, 2022

Organ transplantation (Robertson)

- Organ transplantation around the world is typically from voluntary donors
- Developed countries have systems of altruistic giving of organs, with informed consent from donor and/or family
- States enable, encourage, and police a system of altruistic, voluntary organ donation

“The practice of using exploitation, coercion, or fraud to steal or illegally purchase or sell organs.” (Meshelemiah and Lynch 2019)

- Often carried out by transnational criminal gangs
- Involves kidneys and is from living donors
- States are supposed to criminalise and seek to suppress illicit trafficking activity

Organ trafficking in China

- China is the only (known) country where state institutions are involved trafficking organs from prisoners on a systematic basis
- Growth of the system began in 1980s-1990s; very rapid expansion in 2000
- Tens of thousands of transplants annually (numbers disputed; claims range from 10,000 - 90,000)
- No legal framework until 2007
- System said to be reformed since 2015 to no longer use prisoners

BMC Medical Ethics

[Home](#) [About](#) [Articles](#) [Submission Guidelines](#)

Research article | [Open Access](#) | Published: 14 November 2019

Analysis of official deceased organ donation data casts doubt on the credibility of China's organ transplant reform

[Matthew P. Robertson](#), [Raymond L. Hinde](#) & [Jacob Lavee](#) 

[BMC Medical Ethics](#) **20**, Article number: 79 (2019) | [Cite this article](#)

37k Accesses | **7** Citations | **2166** Altmetric | [Metrics](#)

Abstract

Background

Since 2010 the People's Republic of China has been engaged in an effort to reform its system of organ transplantation by developing a voluntary organ donation and allocation infrastructure. This has required a shift in the procurement of organs sourced from China's prison and security apparatus to hospital-based voluntary donors declared dead by neurological and/or circulatory criteria. Chinese officials announced that from January 1, 2015, hospital-based donors would be the sole source of organs. This paper examines the availability, transparency, integrity, and consistency of China's official transplant data.

- Co-authored with Dr. Jacob Lavee, leading cardiac transplantation surgeon and long-term collaborator
- Key player in reforms to Israeli law that prevented transplant tourism and encouraged domestic donations

Research question: Inside the operating room

- What is the role of the medical professional in this programme?
- Anecdotes long circulated of surgeon involvement in killing via organ procurement
- In transplant medicine this is a violation of the dead donor rule (DDR). Foundational to transplant ethics
- DDR states donor must be dead when vital organs procured, procurement must not be the cause of death

Inside the operating room

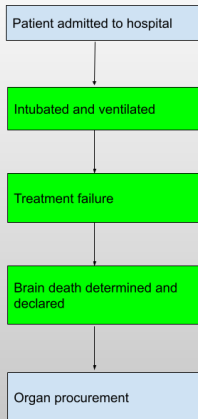
- If surgeons violate DDR, then they are implicated in the killing of the donor
- The medical establishment then becomes an extension of the coercive and predatory power of the state
- Can these claims be tested?

Heart and lung procurement

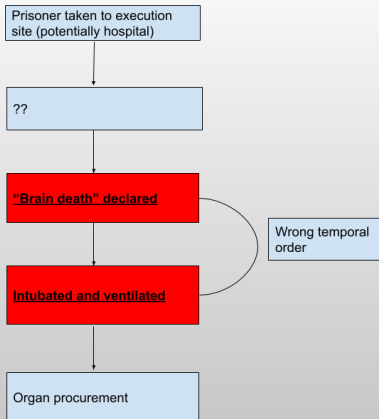
- Involves a donor whose heart is beating
- If heart suffers cardiac arrest, it will in most cases be nonviable in new host
- This differs from kidney procurement after execution at a field site
- High degree of technological sophistication (pre-op, surgery, post-op)
- Demands tight coordination with security authorities who control the prisoner bodies

Appropriate versus problematic declaration of brain death (Lavee)

PROPER BRAIN DEATH DECLARATION



PROBLEMATIC BRAIN DEATH DECLARATION



Brain death determination

- An evaluation for brain death should be considered in patients who have suffered a massive, irreversible brain injury of identifiable cause.
- Brain death is defined as the irreversible loss of all function of the brain, including the brain stem.
- The three essential findings in brain death are coma, absence of brain stem reflexes, and apnea.

Brain death determination

- A patient properly determined to be brain dead is legally and clinically dead.
- In the absence of either complete clinical findings consistent with brain death or ancillary tests demonstrating brain death, brain death cannot be diagnosed.
- Organ procurement for transplantation can be commenced only after brain death has been determined or else the organ procurement becomes the mode of execution.

Brain death determination: coma

- No 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.

- Absence of brain stem reflexes:
 - Absence of pupillary response to bright light in both eyes.
 - Absence of ocular movements using oculocephalic testing and oculovestibular reflex testing.
 - Absence of corneal reflexes.
 - Absence of facial muscle movement in response to a noxious stimulus.
 - Absence of pharyngeal (gag) and tracheal (cough) reflexes.

Brain death determination: apnea test

Before performing the apnea test, the physician must determine that the patient meets the following conditions:

- Core temperature $> 36^{\circ}\text{C}$ or 96.8°F
- PaCO_2 35-45 mm Hg
- Normal PaO_2
- Normal blood pressure

Brain death determination: apnea test

- Connect a pulse oximeter
- Disconnect the ventilator
- Deliver 100% O₂, 6 L/min by placing a catheter through the endotracheal tube and close to the level of the carina.
- Draw a baseline arterial blood gas
- Look closely for respiratory movements (abdominal or chest excursions that produce adequate tidal volumes) for 8-10 minutes
- Measure PaO₂, PaCO₂, and pH after approximately 8-10 minutes and reconnect the ventilator
- If respiratory movements are absent and PaCO₂ is ≥ 60 mm Hg, the apnea test supports the diagnosis of brain death
- If respiratory movements are observed, the apnea test result is negative (i.e., does not support the diagnosis of brain death)

- If the prisoner is intubated *after* being declared brain dead, or *immediately prior* to procurement surgery, then they could not have been actually dead
- If brain death was not established, then heart procurement by the surgeon would be the proximate cause of death
- Health care workers would have become the executioners


```
ts_intubation <- as_utf8(c(“脑死亡后用麻醉机维持呼吸”，“死亡后迅速建立人工呼  
吸”，“自主呼吸丧失的脑死亡供体，在特定条件下应尽可能迅速建立辅助呼吸支持循环，维持供  
心的血氧供应，避免或缩短热缺血时间，同时迅速剖胸取心”，“供体大脑死亡后，首先分秒必争  
地建立呼吸与静脉通道”，“经气管切开气管插管建立人工呼吸”，“快速胸部正中切口进胸”，“供  
者脑死亡后迅速建立人工呼吸”，“供心保护脑死亡后用麻醉机维持呼吸”，“供体确定脑死亡后，  
气管插管，彻底吸除气道分泌物，用简易呼吸器人工控制呼吸”，“供体脑死亡后，迅速建立人工  
呼吸”，“供体脑死亡后快速正中开胸，同时插入气管导管人工通气”，“脑死亡后，紧急气管插  
管”，“供者行气管插管”，“供者行气管插管，球囊加压通气，静脉注射肝素 200mg”，“脑死亡  
后，用麻醉机维持呼吸”，“供体在确认脑死亡后，气管插管，建立人工呼吸”，“脑死亡后气管紧  
急插管，纯氧通气”，“供体死亡后行人工呼吸、循环支持”，“脑死亡后，气管插管”，“脑死亡后  
立即气管内插管给氧”，“脑死亡，面罩加压给氧，辅助呼吸”，“脑死亡后，将供体取仰卧位，争  
取做气管插管”， ... ))
```

Algorithm

```
get_string_matches <- function(file_text, target_string){
  res <- afinde(file_text, target_string, window = nchar(target_string))
  location <- res$location
  distance <- res$distance
  match <- res$match
  context <- substr(file_text, as.integer(location)-70, as.integer(location)+70)
  res2 <- as.data.table(cbind(target_string, location, distance, match, context))
  return(res2)
}

get_full_match <- function(path, file_name, target_strings) {
  file_text <- fread(paste0(path, file_name), sep = NULL, header = FALSE)
  res_afinde <- future_map(target_strings, ~get_string_matches(file_text, .x))
  res <- rbindlist(res_afinde)
  res3 <- as.data.table(cbind(path, file_name, res))
  names(res3) <- c("path", "file_name", "target_string", "string_location", "string_distance", "string_match", "string_context")
  return(res3)
}
```

5 讨论

5.1 关于供心保护

供心的保护直接关系到移植心脏的成败。对于脑死亡的供者,自主呼吸丧失,心肌缺氧,在这紧急情况下,必须在紧急开胸的同时,进行紧急气管插管及辅助呼吸,以维持心脏的血液循环和氧供,缩短心脏的热缺血时间。本文供体开胸时,胸壁切口已苍白无血迹,心脏已紫绀,跳动微弱,但于气管插管供氧后心脏搏动迅即转为有力^[1]。取供心时自第4肋间切断胸骨进胸,速度快,显露良好,在野外操作无电源不能进行胸骨锯开的情况下采用此切口不失为一良好选择。本文从开胸到供心取出,耗时仅3min。供心的心肌保护以冷停搏液灌注加低温最为适用。本文采用3个加有4℃冷生理盐水的塑料袋配合小冰壶和大冰桶的使用,满意地保护了供心,使供心在远距离运送,冷缺血超过4h的情况下,心脏移植后仍有良好的心功能。

• 20 •

TODAY SURGE April 2019 No. 4

脑死亡无偿器官捐献供体维护期的护理

李 丹 罗雅丹 董 力

摘要 总结脑死亡无器官捐献者遗体维护期的护理方法,包括生命体征的维护、心脏功能的维护、呼吸功能的维护、肾功能的维护、肝功能维护以及人文关怀。认为通过维护期有效的护理措施可保持并抑制器官的机能,确保其成活率,发挥脑死亡器官遗体捐献的强大的正能量;通过向捐献者告知仪式,对其家属实施人文关怀,习宣传器官捐献让生命传承的义举,让更多人认可器官捐献、自愿捐献,理解国家器官捐献政策,以挽救更多的生命。

定價: 842元

文章编号: 1000-0602(2006)01-0000-00

文章编号: 1006-6411(2015)04-0029-02

当器官移植的来源于道德状态,脑死亡供体无疑是解决器官移植困难的普适办法,为广大患者带来了福音。自 2003 年卫生部颁布了“我国脑死亡判定标准(成人)和脑死亡判定技术规范”(征求意见稿)^[1]。为脑死亡器官捐献工作提供有力的理论依据。近年来,我国脑死亡器官捐献(donation after brain death, DBD)已逐渐成熟,越南海人接受并开展,我中心于 2019 年 1 月~2012 年 11 月期间完成了 88 例 DBD 供体的器官捐献工作,现将 2018 例移植手术的临床管理体会报告如下。

1 临床资料

本组 DSD 供体病例中,男 15 例,女 3 例,年龄 12~41 岁,其中车祸至重度颅脑损伤 15 例,脑血管意外 2 例,脑胶质瘤 1 例,供体维持时间 12~400,其中 2 例出现一过性血肌酐升高。

工作单位: 541002 桂林 中国人民解放军第181医院全军
官移植与透析治疗中心
李丹: 女 大专 护师
通讯作者: 董力
本课题为(ZD114533) 广西壮族自治区卫生厅自筹经费科研
课题
收稿日期: 2014-05-30

患者常因病情严重, 让患者家属在陪护护理的过程中, 感受到心理压力、社会及受尊重需求, 减轻了患者的身心痛苦和心理压力, 满足了患者对舒适生活的需求, 提高了陪护护理的质量和患者满意度, 提升了护理质量^[12]。近年来, 随着社会老龄化进程的加速, 老年患者 COPO 的患病率不断增高, 由于其中部分因年龄增长伴随特殊病情, 陪护护理缺陷导致严重后果, 如果护理人员忽视治疗和护理的护理, 可导致严重后果, 如脑功能损害, 甚至多器官功能衰竭。同时因为 COPO 患者病情复杂, 复发并伴有影响其生活社会活动, 患者常形成悲观、抑郁等负面情绪, 尤其某些急性加重期, 经舒适生活护理和心理护理, 不可使患者处于抑郁状态, 更好地配合治疗, 可明显缩短患者住院日, 降低患者的医疗费用, 同时, 陪护护理人员应作为患者家属进入护理人员。

所有病例均予呼吸机辅助呼吸,经过脱水、降颅压、呼吸兴奋等对症性治疗。瞳孔散大固定,经本院伦理委员会论证符合器官捐献原则并同意捐献^[6]。经脑死亡判定标准(成人)和脑死亡判定技术指南(征求意见稿)^[7]判定为脑死亡。

2 臨床的意義

首次判定经本院颅脑外科、心脏内科专家鉴定,本组 18 例 DED 昏迷原因明确,排除各种原因的不可逆性昏迷,脑干反射全部消失,无自主呼吸,脑电图多导脑电图呈脑死亡图形,判定为脑干在内的全脑功能丧失的不可逆转的状态,观察 12h 无变化,提交本院神经内科、心脏内科、颅脑外科等主任组成的伦理委员会,并批准予以实施手术,是脑死亡外科治疗的重要前提。

3. 提供植物群落的地理

3.1 生命体征的维护 意识能成功完成器官功能, 维护生命体征平稳至关重要, 而血压则是生命迹象的关键, 低血压时, 器官有效灌注减少, 可导致器官衰竭, 因此应动态观察血压变化, 保持动脉收缩压 $\geq 100\text{mmHg}^{[10]}$, 可使用一次性使用防逆流留置针选择静脉给予多巴胺等血管活性药物维持血压, 准确测量容量变化, 维持体液波动范围; 体温维持在 $36^{\circ}\text{C} - 37.5^{\circ}\text{C}^{[11]}$, 体温过高时使用冰帽冰敷头部, 使用降温毯等降温; 体温过低时使用加温毯, 温度为 $40^{\circ}\text{C} - 50^{\circ}\text{C}$ 为宜, 已有肺动脉导管向患者直接加温。

的心中,提高了护理人员的工作素质和护理质量,因此值得在临床护理中推广应用。

参考文献

- 1 何恩亮. 慢性阻塞性肺病患者的心理护理及康复护理探讨[J]. 现代护理. 2011 9(2): 166-167.
 - 2 董伟. 舒适护理在乳腺癌患者术后化疗中的应用[J]. 当代医学. 2010 2: 110.
 - 3 杜社中. 舒适护理干预对 COPD 患者生活质量的影响研究[J]. 中国医学杂志. 2011 4(1): 138-139.
 - 4 陈清华. 胸椎骨折患者的舒适护理[J]. 当代护士(中旬刊). 2012 2: 34-35.
- [本文编辑: 王 萍 王 莉]

Examples from paper (Lavee)

[0573] The donor was intravenously injected with heparin 3mg/kg 1h before the operation. The sternum was transected from the 4th intercostal space into the chest, and the pericardium cut open. **The heartbeat was weak and the myocardium was purple. After assisted ventilation through tracheal intubation, the myocardium turned red and the heartbeat turned strong.** A needle at the root of the ascending aorta was used to perfuse with 1000ml of cold cardioplegic solution at 4c°... **When the chest of the donor in this paper was opened, the chest wall incision was pale and bloodless, and the heart was purple and beating weakly. But the heartbeat became strong immediately after tracheal intubation and oxygenation.**

[0191] ...weight 65kg, blood type O, the same as the recipient's blood type, brain death via external trauma. **Before the chest is opened, 100mg of heparin is injected and the mask is pressurized to give oxygen to assist breathing.**

[0278] 1. Donor extraction. **After the donor is declared brain dead, put donor in the supine position, strive for tracheal intubation, quickly disinfect, drape, and cut.**

Conclusion (Robertson)

- Is this ongoing? We do not know.
- A simple heuristic: if prisoners are no longer being used, then naturally it would not
- If prisoners *are* still being used, then it would be rational to believe that this practice continues
- We think there is compelling evidence that prisoners are in fact still being used