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INTRODUCTION

- As physicians, one must be proficient in various procedures that help to sustain and save lives (Table 1).¹
- Multiple methods exist to teach medical trainees these methods, including virtual reality programs, animal models, cadaver donors, and live patients.¹
- One method that many medical centers also allow is practicing these procedures on newly deceased patients, especially for medical trainees who lack experience.¹
 - These procedures are practiced on patients who die in the emergency department or intensive care unit and are not registered for organ donation¹
 - In comparison to the alternatives, this practice allows physicians to practice on fresh tissues, while gaining exposure to various anatomical variations, circumstances, and equipment.^{1,2,3}
 - It also minimizes any potential risks to living patients.²
- This practice occurs in many training programs, but consent is rarely obtained when doing so.^{2,3}
- While there are studies that look at the ethics of performing this practice (and whether it should be done), there are only a few that look at the role of consent and the best method of consent for this process.⁴

THE ROLE OF CONSENT

- Many argue for the inclusion of consent in this practice, while others believe that it merely hinders the process.^{2,3}
- In part, this debate takes into account societal benefits, physician and family burden, the rights of the deceased persons and the rights of individuals, and legal considerations.^{1,2,3}
- Those who argue against the use of informed consent posit that autonomy doesn't extend to the deceased and that patients implicitly allow providers to teach and practice on their newly deceased bodies.^{1,2}
 - Additionally, informed consent is meant to address treatment options, and newly deceased patients derive no benefits from intervention.¹
 - Newly deceased patients don't incur risk from these procedures.^{1,2}
- Those who favor informed consent argue that consent is part of the medical professional ethical code to prevent the violation of non-maleficence and to uphold the principles of integrity, honesty, and veracity.^{2,3}
 - Consent is also mandatory to meet the criteria of "universalizability" and prevent violation of corpse mistreatment laws.^{2,3}
 - Consent provides the opportunity to explain the process, while allowing patients or family members to express their concerns and have them addressed.²

OTHER PRACTICES

- The consent process for cadaver donations/anatomical gifts and brain donation for research are similar, where those interested register with their chosen organization and then sign consent forms.⁶⁻⁹
 - Consent for these practices include information about the process, the requirements, and an explanation of what happens to the donor (Fig. 1).^{6,7,9}
 - At the time of death, a third party or the next of kin must inform the organization about the donor's death and then sign and witness a consent form (Fig. 2).^{6,9}
 - At any time, potential donors or next of kin may rescind their offer.^{6,8}
 - Organizations also place restrictions on who may donate and the condition or state of the donors that they accept.^{6,8}
- Consent for organ donation involves an analogous process, where the interested person registers with the state to be a donor through informed consent (Fig. 3).^{10,11}
 - Once a patient has died, the medical team in charge of his or her care contacts the local Organ Procurement Organization (OPO) to confirm whether he or she can be a donor.¹⁰
 - OPOs are a unique, separate entity from the medical staff. They ensure that the deceased patient is registered to be a donor and speak with the family about the process. If the patient is not registered, they obtain consent from the family.¹⁰

BEST PRACTICES

- Procedures should always be done under the guidance of competent supervision to encourage accountability, prevent harm/misuse to the patient's body, and create an environment of professionalism.
- Procedures should be taught in a structured manner with explanations of their utility, benefits, and risks, rather than when the newly deceased body becomes spontaneously available.
- Consent for all planned educational procedures must be obtained
 - For minimally invasive procedures, obtain consent from the patient
 - In case this cannot be obtained, the family should be consented instead
 - For more invasive procedures, consent the patient and the family.
- Consent should be comprehensive and informed, explaining what will be done, why, and the risks and benefits. Consent guidelines should also explain these factors for each procedure that will be practiced.
 - Consent forms should be explicitly given to the necessary parties, separate from any other documentation and forms
 - Those who perform the consent should be separate from the medical treatment that is treating the patient.
 - Patients who consent should receive or have documentation to provide awareness of their decision to family members, their physicians, etc.
- Before family members and/or patients are consented, they should be given time to process their emotions regarding their situation.
 - If they are unable to truly consent because of emotional compromise, then they should not be approached.

Table 1. Examples of Life Saving Procedures

Endotracheal Intubation
Cricothyrotomies or Tracheotomies
Pericardiocentesis
Arterial or Venous Catheterization
Central IV Placement
Pericardiocentesis
Needle thoracostomy

CURRENT SUGGESTIONS ON CONSENT

- Many medical organizations believe consent should be obtained, including AMA and SAEM.^{2,3}
- Many studies have shown that the public is willing to consent to the procedures and believes that consent must be obtained before trainees can practice procedures.^{4,5}
- Other studies have suggested that consent by the patient (prior to death) is acceptable for practicing non-invasive procedures, while additional surrogate consent is needed for invasive procedures.^{4,5}
- Multiple methods of consent have been suggested and debated, but an overall consensus has yet to be reached. Many of the considerations for a consent process include the patient demographic, concerns of emotional stress or timing, cross-cultural barriers, ownership of one's own body.^{1,2,4,5}
- Suggested methods include:
 - Obtaining consent from the patient (prior to his or her death).^{2,4}
 - Obtaining surrogate consent from family members (either peri-mortem or post-mortem).^{4,5}
 - Consenting both the patient and family members.⁵
 - Creating a consent process similar to organ donation.^{2,4}

METHODS

- PubMed and Scopus were searched to identify studies that met the following inclusion criteria:
 - Used the key words "informed consent," "death," "medical education," "graduate/ethics" "cadaver," and/or "attitude to death."
 - Published within the last 20 years.
 - Written in English.
- A literature review was performed to evaluate the role of consent in this training method and to compare it to other similar practices to determine the best ethical approach.

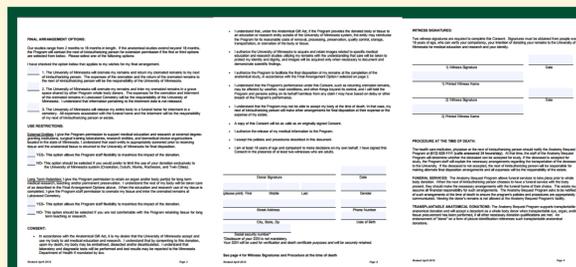


Fig 1. An example of consent and registration forms for cadaver donation from the University of Minnesota School of Medicine.⁶

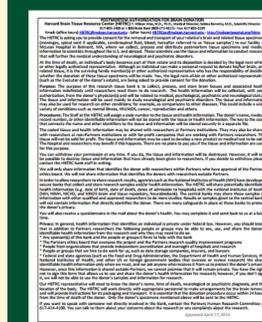


Fig 2. An example of consent provided for brain donation from Harvard University Medical School.⁹



Fig 3. An example of consent and registration provided for organ donation by ServiceOntario.¹¹

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