

# How to set up and run a cadaveric dissection course

Conducting and implementing a cadaveric dissection course requires careful planning. **Rachel Edmiston, Rajesh Anmolsingh, Omar Mirza and Nirmal Kumar** offer a guide to individuals highlighting the licensing and legal processes involved with the use, preservation and disposal of cadavers in the UK.

Cadaveric dissection is an ideal technique, which offers clinicians the opportunity to practise, refine and develop operative skills necessary for real-world procedures. It allows clinicians to accomplish specific skill acquisition goals and reinforce good practice, before even stepping into the clinical environment. Repetition using high-fidelity materials in a high-fidelity environment can reinforce positive practice, aiding cognitive development and reducing the learning curve associated with acquiring new skills [1]. With close trainer supervision and feedback, the learning process is consolidated and objectives can be identified for onward development. Additional benefits include formal assessment within the competency-based training model based on achievement of the learning objectives. Of utmost significance, by delivering training in a low-risk, controlled environment, prior to performance on real patients, competence may be attained without any risk of jeopardising patient care [2].

The idealisms and contributions of such a course is clear but the question remains: how would someone go about organising such a course?

Setting up and running a cadaveric course requires significant planning and preparation. Legal requirements must be met, cadavers must be kept as per national regulations and ethical principles must be followed.

## What are the legal requirements?

The human tissue act of 2004 was

introduced as a consequence of public outcry regarding the inappropriate retention of human remains. The act controls the use of cadaveric material and is regulated by the Human Tissue Authority (HTA). The act itself regulates the removal, storage and use of human tissue and it is vital that individuals planning to set up a cadaveric facility have a comprehensive insight into its contents.

Under this act, surgical simulation falls under a 'scheduled purpose' and can therefore be performed at any UK hospital that has a HTA postmortem licence. Within our hospital site there is no mortuary and, as such, prior to setting up our lab we applied for a separate HTA anatomy licence, which covers the same regulations as above. This licence enables the HTA to regulate all cadaveric units properly, including regular inspections to ensure that standards are being kept.

In addition to the HTA, the institute of anatomical science also provides guidance on the use of cadavers for anatomical examination that needs to be reviewed by course organisers ([www.anatomical-sciences.org.uk/guidelines/guidelines.htm](http://www.anatomical-sciences.org.uk/guidelines/guidelines.htm)). This brief document describes the monitoring required by the HTA but also the importance of regular self-audit of each unit. Each unit should have a standard operating procedure (SOP) document, which clearly demonstrates how cadavers are handled, used and disposed of to ensure this is in line with the HTA guidance. Importantly, a designated individual (DI) needs to be identified as the individual with ultimate responsibility for the specimens.

## Once set up, how do we source cadavers?

Within the UK it is not always easy to source fresh frozen cadavers and, as a result, units often obtain material from overseas. Within our unit, cadavers are obtained from the USA. In accordance with the HTA, specimens themselves should not incur a charge if they have been freely donated for examination. However, it is acceptable to levy extra charges, which are specifically applied for the preparation and transport of specimens. In some instances, charges will occur for specimens themselves, particularly if sourced from overseas.

Fresh frozen cadavers arrive in containers containing dry ice with efficient delivery and a courier service from our local airport that alerts the unit staff as to the likely timing of arrival. The cadavers must meet the requirements described in the HTA's Code of Practice 8, which describes the import and export of human bodies, body parts and tissue.

As per the guidance on use of cadavers, each specimen should have a unique identification code, appropriate donor consent and the medical death certificate available. Upon arrival at our unit, each cadaver documentation must include:

- (i) Cause of death
- (ii) Whether the cadaver was 'willed'
- (iii) Medication history
- (iv) Past medical history
- (v) Results of serology including HIV, Hepatitis B and C.

Our donor source makes life a lot simpler in this regard by ensuring all documentation is clear but, if using alternative agencies, ensure that the vital information is included.

## What to do before the course:

Preparation is key, as cadavers often need to be ordered at least one month in advance. Good, well-prepared specimens enhance the benefits derived by participants of dissection courses.

Before use, the cadavers need to thaw and this is dependent on the type of body

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part. Our process for this includes bringing the cadavers into a locked secure room within the skills lab with gradual exposure of different body parts, and also gradually increasing the exposure to ambient (room) temperature.

In accordance with HTA guidance, authorised access to cadavers in the lab area is restricted to individuals with a specific purpose to view, such as healthcare professionals. This should be a formal sign in and sign out registration process.

In our unit, the registration process involves candidates reading the standard operating procedure and risk assessments, as well as being asked to sign a disclaimer which includes the following:

- Though the cadavers are screened for infectious diseases, delegates are asked to assume that the specimen has a blood borne virus and use universal precautions as they would adopt in their place of work (usually an apron and gloves).
- Acknowledge that filming or photography is strictly prohibited.
- Signature of acknowledgement that the unit is not accountable for any personal injury that might occur.

### During the course

Throughout the course, it is emphasised that cadavers should be handled with respect and dignity at all times. It is also important to remember that the thawed specimens need careful handling and continued preservation (with or without using storage fridge units) for the length of the course.

It is important to plan the number of delegates correctly, depending on the cadavers being used. We would also recommend a dedicated faculty, with a faculty to delegate ratio of 1:2 facilitating the provision of excellent teaching and hands-on experience.

In our unit each session starts with a revision of anatomy followed by a run through of the surgical steps via a cadaveric dissection demonstration projected to the room through a large screen. Following this demonstration, delegates have the opportunity to practise these taught skills

under close supervision. Trainees are encouraged to use recognised surgical techniques and methods and a prize is awarded to the best dissection at the end of each session.

Instruments designated to specified use on cadavers must be handled with care. Multiple surgical instruments are often required and detailed planning is needed to ensure that all instruments for each procedure are available in suitable numbers. Within our unit, common instruments must undergo a sterilisation process following each use. Instruments such as endoscopes and microscopes are often loaned by specialist equipment companies who clean them in line with their own policy.

### What happens after the course?

Specimens are kept for one week. During this time, they will be thawed and then refrozen in preparation for disposal. Within our centre, this process is organised through official hospital channels: the specimens are placed in containers with the unique identification number and specimen type labeled. A separate company is responsible for arranging the disposal of the specimens.

Cadaver dissection courses have historically proven their worth to clinicians throughout the ages. The knowledge and skills acquired through this unique experience are unparalleled to any simulated courses and have a more profound impact on daily clinical practice. We must acknowledge, however, that the bodies were donated for the purpose of education and research and deserve utmost respect for their magnanimous and selfless act. Without this, modern medical science would not be the life-saving spectacle it is today.

### Summary

Conducting and implementing a cadaveric dissection course requires careful planning. It is vital that organisers have good insight into the legal and ethical aspects highlighted. Preparation is key in providing a high quality course both in terms of cadaver preparation, faculty provision and instruments.

### References

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### AUTHORS



**Rachel Edmiston,**

ST4 ENT Trainees (North West Deanery), Royal Albert Edward Infirmary, Wigan

E: [Rachel.edmiston@nhs.net](mailto:Rachel.edmiston@nhs.net)



**Rajesh D Anmol Singh,**

Research Fellow, Dept of Otolaryngology, Wigan Wrightington and Leigh NHS Foundation Trust, Wigan.



**Omar Mirza,**

Specialty Registrar Year 5 in ORL-HNS, Royal Preston Hospital.



**B Nirmal Kumar,**

Consultant ENT Surgeon and Director of Medical Education, Department of ENT, Wigan Wrightington and Leigh NHS, Wigan.

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