

The role of simulated operations using a human fresh frozen whole body cadaveric model

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Background

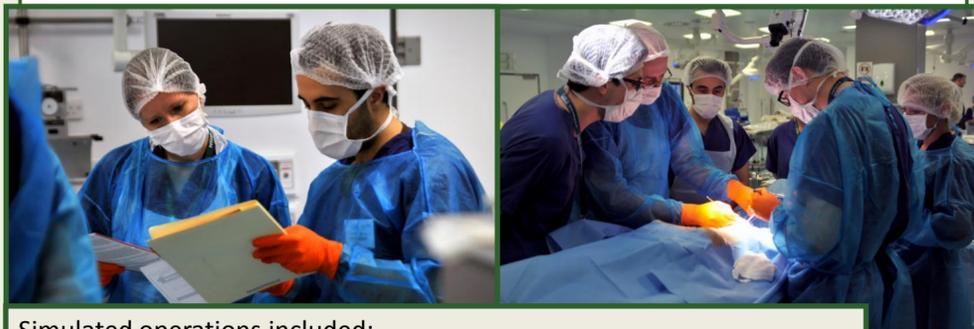
The Better Training Better Care (BTBC) programme is a Health Education England initiative to develop sustainable and adoptable models to maximise learning opportunities in the time available for training. The UHSM Pilot provides dedicated training lists for Core Surgical Trainees (BTBC lists).

Aims

Cadaveric simulation has the potential to help trainees develop technical skills which can be transferred to clinical practice. The aim of this pilot was to evaluate the feasibility and educational value of simulated operations on human whole body fresh frozen cadavers for Core Surgical Trainees to compliment BTBC lists.

Methods

- Core Surgical Trainees in all surgical specialties at the BTBC pilot site were invited to participate in a cadaveric workshop.
- Index operations were performed on cadavers in the Manchester Surgical Skills and Simulation Centre (MSSSC) in the University of Manchester with a Consultant Supervisor Scrubbed.
- Workplace Based Assessments (WBAs) were completed at the end of each operation.
- Key anatomy was demonstrated on prosections prior to each procedure.



Simulated operations included:

- Team Brief
- Simulated Sterile field
- WHO Checklist
- Operating Department Practitioner Trainee

- Course costs were recorded.
- Educational value was assessed using:-
 - Feedback questionnaires for trainees and trainers
 - A modified Dundee Ready Educational Environment Measure (DREEM) survey.

Results

21 trainees completed 43 operations with WBAs over 2 days using two cadavers.

Simulated Operations Completed with WBAs

- Coronary Artery Bypass Grafting
- Open inguinal hernia repair
- Laparoscopy
- Laparotomy
- Closure of laparotomy
- High tie of sapheno-femoral junction
- Exploration of Common Femoral artery
- Sternotomy
- Vein Harvest for CABG
- Radial artery harvest CABG
- Thoracotomy
- Deltopectoral approach to the Shoulder
- Carpal Tunnel
- Tendon Repair
- Skin flaps on the face, and limbs
- Tracheostomy
- Tonsillectomy
- Submandibular gland excision
- Scrotal Surgery
- Cystoscopy
- Ureteric mobilisation

Feedback

How useful do you feel simulated cadaveric workshops are as a learning tool?			
Not at All	Limited	Useful	Very Useful
0%	0%	0%	100%

How useful do you feel simulated cadaveric workshops are to improve your confidence?			
Not at All	Limited	Useful	Very Useful
0%	0%	26%	74%

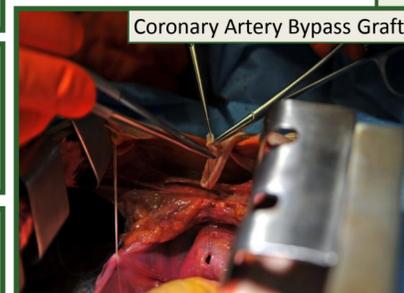
Were the procedures simulated appropriate for your level?			
Basic	Appropriate	Challenging	Too Complex
0%	74%	26%	0%

How useful do you feel simulated cadaveric workshops are to improve your surgical skills?			
Not at All	Limited	Useful	Very Useful
0%	0%	17%	83%

How do you rate the quality of unembalmed tissue in comparison to handling live tissue in the operating theatre?			
Not at all similar	Similar	Very Similar	
0%	75%	25%	



Diagnostic Laparoscopy



Coronary Artery Bypass Graft



Open Inguinal Hernia Repair

- A modified DREEM score of 138/184 indicated the workshop to be an "excellent educational experience."
- Costs were approximately £203 per operation.



Small bowel taken from cadavers was used for an anastomosis workshop to maximise learning opportunity.

Discussion

- Simulated operations using fresh frozen cadavers are of excellent educational value.
- The costs are reasonable and potentially affordable.
- With careful timetabling of procedures and use of material for concurrent workshops, the cost efficiency may be improved to make cadaveric simulation sustainable and adoptable for trainees.
- The role of a cadaveric workshop is undergoing further evaluation. Two further courses are scheduled for the second year of the BTBC pilot.

Acknowledgements

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