The NHSBT National Deceased Donation Course 2025 V33.0

Centres used: Belfast Cardiff Salford Nottingham StirlingA 2-day programme for ICM trainees with the multidisciplinary team

Authors: Dale Gardiner & Caroline Hird

Edited by: Jill Featherstone

Faculty Manual: V33.0
Centres:
Belfast, Cardiff, Nottingham, Salford, Stirling
2025

Course content is designed following engagement with the Faculty of Intensive Care Medicine and Intensive Care Society.

Change log

This document is to support NHSBT National Deceased Donation Course

As the document is updated, version numbers will be changed, and content changes noted in the table below

Version number	Date issued	Summary of changes
33.0	January 2025	• Whole reviewed and updated for grammar and layout, accuracy of sim centre details • DBD2 station reviewed and updated following new AoMRC Code of practice for Neurological Death Testing 2025. • Optimisation Station updated in line with current practice and use of NHSBT's Donation Actions Framework • Addition of 2024 NHSBT and MOHAN Foundation apps for **DBD** and **DCD** • **Links to 2025 AoRCM A Code of Practice for the diagnosis and confirmation of death 2025 Update** • **Addition of Dead or not Dead quiz 2025 updates** .

Contents

ACCESS ONLINE FACULTY PAGES AT:

To visit the key website area for the delegates click HERE.
Navigate to:
https://www.odt.nhs.uk/deceased-donation/education-and-training/the-national-deceased-donation-course-for-icm-trainees/

For Faculty pages click HERE
This is a hidden page on the website, for faculty only. This page will be further populated with course content prior to course delivery.

2025 Dates

Adult pathway courses:	Adult & paediatric discipline courses (Please see other manual)
Cardiff January 28th & 29th 2025	Birmingham June 24th & 25th 2025
Salford March 26th & 27th 2025	London November 18th &19th 2025
Stirling September 9th & 10th 2025	Newcastle December 2nd & 3rd 2025

Course structure

provided at all centres

Day 1 Usually hotel based, 10:30 until 18:00

Organ donation: theory, ethics, culture

Talks and discussions around key aspects of excellence in organ donation practice.

Accommodation and Course Dinner

Allows for socialising, networking, and exploring donation practice informally between faculty and delegates.

Day 2 Sim centre based 08:15 until 17:00

Organ Donation Simulation of 2 patient journeys

8 delegate groups rotate through 8 Stations of DBD and DCD pathways, applied ethics and nuances of diagnosing neurological death.

Full details of the individual centre sites to be used are contained within the faculty letter.

Thank you for your support in the delivery of
The National Deceased Donation Course

Course background

NHSBT's National Organ Donation Committee, with representation from the Faculty of Intensive Care Medicine (FICM) and the Intensive Care Society (ICS), originally piloted a national donation course for intensive care medicine (ICM) trainees in November 2013. Evaluation was excellent, the course has developed and NHSBT is now able to offer this national two-day course to increasing numbers of UK ICM and paediatric trainees.

The development of the course follows Recommendation 11 of the Organ Donor Task Force (2008) that:

> *"All clinical staff likely to be involved in the treatment of potential organ donors should receive mandatory training in the principles of donation. There should also be regular update training."*

The NHSBT strategy 'Taking Organ Transplantation to 2020', was supported by all four UK health departments and emphasised the need for NHSBT to work with professional bodies to:

- Develop training programmes to sustain and increase clinicians' organ donation understanding and expertise.

- Ensure that families of potential donors will only be approached by someone who is both specifically trained and competent in the role and provide training packages and accreditation to those who wish to develop this competence.

- Promote and support early and effective physiological optimisation of the potential DBD donor through adoption of the 'donor care bundle' by hospital ICU/PICU staff and support this process through audit and training.

As we look ahead, NHSBT's 10 year strategy 'Organ Donation and Transplantation 2030: meeting the Need', emphasises deceased donation being 'an expected part' of end of life care and seeks to achieve partnership working across the UK and the NHS to progressively improve rates of organ donation with an ambition to be world-leading in organ donation and transplantation through training for NHS staff involved in the donation process.

Course Aims:

The course aims to develop ICM and Paediatric ICM trainees to have the knowledge and skills to confidently include recognised good practice for organ donation as an expected part of their care for dying patients and their relatives.

Overall Learning Objectives

1. Gain an appreciation of the benefits deceased organ donation can bring to bereaved ICU and PICU families and to transplant recipients.

2. Gain knowledge and skills in diagnosing death and organ donation.

3. To improve communication skills around breaking bad news and organ donation.

4. Develop capacity to make informed ethical and legal choices in the context of deceased organ donation.

5. Develop ability to work productively with others, particularly the Specialist Nurses in Organ Donation.

FICM Syllabus covered by the Course

This course predominantly covers Domain 8: End of Life Care. See Appendix A for greater detail on how this course is matched to the syllabus. The course is not designed to assess competency itself, but it is intended to be foundational to the development of these competencies.

Course Outline

The Deceased Donation Course (ICM) is designed for two days and to provide maximum impact and learning the course is designed for up to 24 ST5 or above ICM / PICM trainee participants or equivalent. The first day covers the theoretical component and is usually held in a hotel as preparation for simulated practice on day 2.

This is followed by a course dinner designed to enable informal engagement between faculty and delegates.

The second day consists of 6 workshops and two tutorials. For the second day the trainees are divided into groups of three trainees in each group. Each group is joined by an intensive care nurse /PICU nurse and preferably also by a Specialist Nurse in Organ Donation.

In line with current practice Specialist Nurse Organ Donation (SNOD) and Specialist Requester (SR) Nurses will be referred to as Specialist Nurse or SN throughout this document.

Timetable for Day 1

Day 1 builds an overview of deceased donation and transplantation. It establishes the ethical, legal and professional frameworks of deceased donation, sets out best practice around identifying and supporting potential donors and collaboratively approaching families with specialist nurses.

TIME	mins	Event	Comments
10.00	30	**Registration and Coffee**	Sign in sheet to be completed
10.30	10	**Welcome & Introduction**	Housekeeping and introductions
10.40	40	**Deceased Donation in Context**	Types of Deceased Donation, the UK & International experience, missed Opportunities, transplant outcomes novel technologies and the future
11:20	20	**Early notifications coroner/PF and effective working with the SN**	Making effective notifications Coroner/PF considerations SN Role in Donation
11.40	20	**Refreshments**	
1200	60	**Diagnosis of Death**	The UK criteria applied (includes the recent 2025 updated guidance).
1300	30	**Donor & Recipient Stories**	The Donor Family and Recipient experience How is donation valued?
1330	60	**Lunch**	
1430	60	**Making conversations with families when donation is being considered.**	Bereavement & communication in ICU, breaking bad news and the collaborative approach to families regarding organ donation.
1530	15	**Donor Optimisation**	Donor Management, the care bundle for donors, improving donation and transplant outcomes
1545	15	**Refreshments**	
1600	45	**Law and Ethics in Deceased Organ Donation** **Donation Actions Framework (DAF)**	Legal and ethical frameworks in donation practice UK law and Human Tissue Authority (HTA) Using the DAF framework an interactive introduction
16:45	30	**Ethics**	Moral Balance: exploring an ethical framework for practice
1715	30	**Ask the Faculty**	Open questions and discussion
1745	15	**Discussion, wrap up and outline of Day 2**	Outline of Day 2
1800	60	**Faculty meeting**	For faculty and those observing for course development
1930		**Course dinner**	

Day 2 (This overview will assist in constructing the whole course, individual station information gives greater detail for setting up and running the stations)

Aim

The participants are taken on two patient journeys, one donation after neurological diagnosis of death (DBD) and one donation after circulatory death (DCD). The stations demonstrate donor optimisation, develop high level skills in diagnosing death as well as consider the ethics and law surrounding deceased donation, in addition to family conversations.

A series of 6 workshops + 2 tutorials = 8 sessions (45 minutes each)

- 3 communication workshops (each ICM participant will perform in one and observe two)
- 1 confirming death using neurological death criteria (workshop sim)
- 1 withdrawal of life sustaining treatment, diagnosis of death following cardiorespiratory arrest and optimisation for lung DCD (workshop sim)
- 1 donor optimisation (workshop sim)
- 2 tutorials (one exploring ethical issue in organ donation, and the second exploring the pitfalls in contemporary neurological death testing)

Participants remain in groups of three throughout the day, alongside 1 assigned ICU nurse = total of 4 per group, a Specialist Nurse will also join the group for at least 4 of the 8 sessions.

Observers may also join the group either for their own education or as preparation for their own faculty role. This may include international observers.

NB// Course arrangements will always work within any national or local guidelines and measures associated with any infection control necessary at the time of delivery.

Equipment / Resources

For adult scenarios:

1 High fidelity simulation room and mannequin where realistic physiological responses to withdrawal of life sustaining treatment can be simulated.

1 High fidelity simulation mannequin room where the optimisation of a donor in ITU can be simulated.

1 Simulation room and standard intubating simulation mannequin for neurological death testing

3 communication rooms

1 tutorial / participant room (independent of the lunch and refreshments space where possible)

1 faculty room and/or 1 actor space/room where possible

Faculty (minimum)

- 8-10 Clinical leads in organ donation who are familiar with the course (this can include the CLOD course leader)
- 3-4 Professional Development Specialist (PDS) (this can include the PDS course leader)
- 1 Co-ordinator (PDS)
- 6 actors to support the patient scenarios used

Participants:

- 24 ICM Trainees
- 8 ICM nurses
- 6-8 Specialist Nurses (as available) 4= minimum required.
- Up to 8 observers.

Observers are admitted strictly at the invitation of the course leaders**.**
Recommendations for attendance as observer can be made via **Professional.DevelopmentODT@nhsbt.nhs.uk**

There must be a clear learning objective for the attendance of an observer.

Overview of day 2

Workshop	Equipment / Faculty	Objectives
DBD 1 – Explaining Tests RED BLUE or YELLOW ROOM (Communication stations) Participants observe a short video setting the scene of the patient called 'Margaret' who has suffered a subarachnoid haemorrhage, they are told that neurological death testing is planned. They must communicate the plan to test and explain neurological death to the patient's relatives. In Margaret's case one of the relatives will raise donation as a known decision & delegates are expected to 'park' this either themselves or transition to the SN to do so.	Room set out like a quiet relative room (sofas / chairs for 5-6 people) 2 actors 1 Specialist Nurse 1 CLOD Faculty 1 PDS Faculty 1 bedside nurse 'Yellow/Red or Blue box' with paperwork Additional chairs for faculty, other delegate and observers (5-6 people) Total chair count 10-12	To demonstrate effective planning and involvement of the Specialist and ICU nurses both in planning and in the room. To demonstrate communication skills in explaining neurological death and the tests. To demonstrate safe 'parking' where an early mention of organ donation is made. To demonstrate effective transition and trust in the Specialist Nurse as required.
DBD 2 – Neurological	Simulation:	To show safe practice and skill in confirming death using

Death Testing PURPLE ROOM (Mannequin station) Following on from DBD 1, participants must carry out neurological death testing on the patient.	1 'standard intubating' simulation mannequin (identified as female) for neurological death testing 1 Purple box with paperwork & 'walk through' faculty guide 2025 Equipment for neurological death testing. (see set up) 1 Faculty minimum	neurological criteria 2025 To recognise the role of the Specialist Nurse in supporting effective testing and support of the family in witnessing tests To correctly identify the relevant form for use in which circumstance and where these can be accessed.
DBD 3 – End of life donation discussion RED BLUE or YELLOW ROOM (Communication station) Following confirmation of death in the 'NDT' station, participants must explain to the patient's relatives (the same two actors from DBD 1) that the patient has died. Planning of this conversation Aim is to get both to the same point of acceptance and then approach for organ donation within end-of-life considerations.	Room set out like a quiet relative room (sofas / chairs for 5-6 people) 2 actors 1 Specialist Nurse 1 CLOD Faculty 1 PDS Faculty 1 bedside nurse 'Yellow/ Red or Blue box' with paperwork Additional chairs for faculty, other delegates, and observers (5-6 people Total chair count 10-12	Demonstrate effective planning and involvement of the Specialist and ICU nurses both in planning and in the room. Demonstrate communication skills in recognising and bringing relatives to the same point of acceptance effectively. Recognise that grief interrupts /slows the cognition of information giving. Delegates can either transition to end-of-life and donation discussions themselves with immediate introduction of the Specialist Nurse (SN) or with safe transition to the SN who will lead an approach for organ donation. SCOTTISH DELGATES: to demonstrate the effective execution of duty to inquire with the specialist nurse as set out in the legislation and supporting documents.
Donor Optimisation	1 High fidelity simulation	To demonstrate knowledge and considerations of the

GREEN ROOM (Mannequin station) Some groups will do this out of the usual sequence of events. The patient is again 'Margaret' now a potential organ donor. Participants are required to ensure that from a physiologically perspective the patient's organs are optimised. Consideration of the effects of neurological death implications and neurological death testing.	mannequin Room as an ICU space/room, with potentially the following problems that need addressing - desaturation - hypotension - diabetes insipidus - hypothermia 1 faculty (minimum) '1 Green' box with paperwork including the appropriate donor Copies of the NHSBT care bundle	physiological effects of neurological death Assessing systematically the interventions that should be considered to enable the best opportunity for organ donation, balancing these with the least harmful intervention to the ongoing transplant outcome. To show understanding of the ethics surrounding the delivery of optimisation interventions. Recognition of the role of the of Specialist Nurse in optimisation.
DCD 1 – Explaining and Approaching RED BLUE or YELLOW ROOM (Communication Station) Explaining a plan to withdraw life sustaining treatment. Planning of this conversation with SN and bedside nurse Plan end of life care including approaching for organ donation with the family.	Room set out like a quiet relative room (sofas / chairs for 5-6 people) 2 actors 1 Specialist Nurse 1 Bedside nurse 1 CLOD Faculty 1 PDS Faculty 1 'Yellow / Blue or Red box' with paperwork Additional chairs for faculty, other delegates, and observers (5-6 people Total chair count 10-12	Demonstrate communication skills with the multi-disciplinary team regarding end-of-life care where organ donation is possible. Demonstrate planning a conversation with the specialist nurse (SN) and bedside nurse. Conduct a discussion with family as per the planned collaborative approach. Demonstrate safe and effective transition of trust to Specialist Nurse to develop the conversation. Recognise that where no OD decision has been recorded, the specialist nurse has the skills to explore a potentially deemed situation. SCOTTISH DELGATES: to demonstrate the effective execution of duty to inquire as set out in the legislation and supporting documents which support the specialist nurses equally able to execute the duty

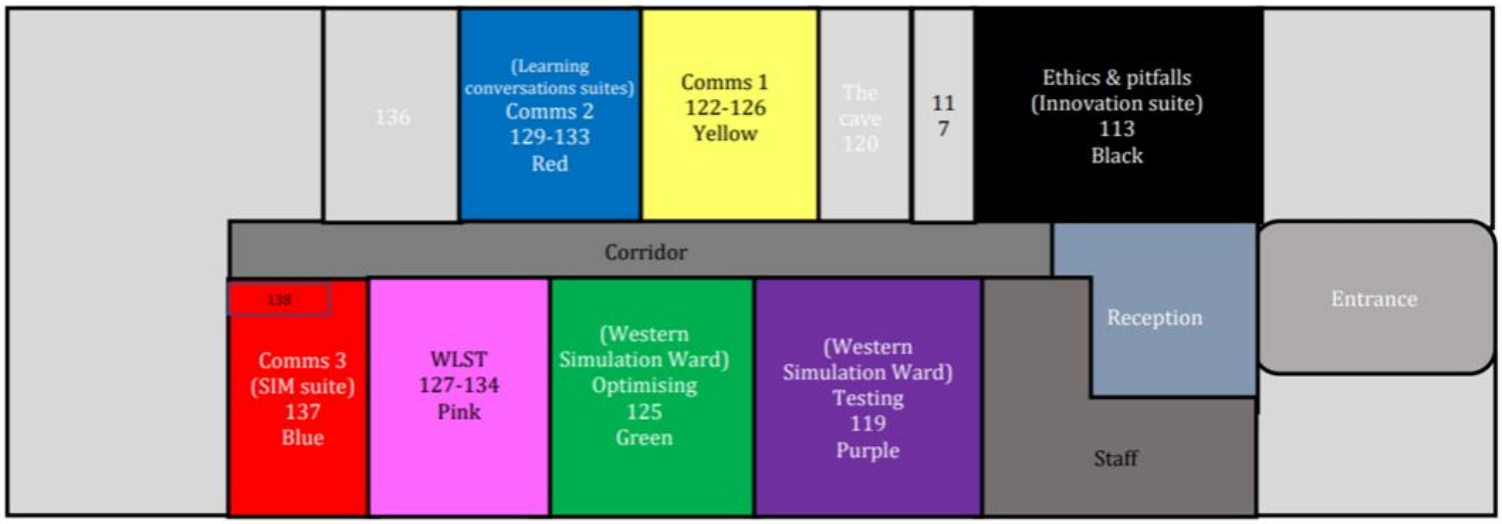
		to enquire.
DCD 2 – Withdrawal PINK ROOM Mannequin Room Withdrawal of life sustaining treatment station Safe diagnosis of death, following cardiorespiratory arrest, and optimisation for lung DCD • Plan • Palliate • Diagnose Death • Reintubate • Reinflate	1 High fidelity simulation mannequin Realistic physiological responses to withdrawal of life sustaining treatment can be simulated, with movement thereafter to another 'theatre area' 1 Faculty 1 Specialist Nurse 1 ICU nurse 1 'Pink box' with paperwork	To demonstrate effective withdrawal of life sustaining treatment planning and end-of-life care balancing patient dignity with the interventions that support organ donation whilst identifying their impact. Correct identification of mechanical asystole. Safe diagnosis of death following cardiorespiratory arrest Safe, lawful practice when facilitating lung donation. Effective collaborative working with the specialist Nurse leading the co-ordination of the withdrawal of life sustaining treatment palliation and safe preparation for lung donation during the retrieval process.
Tutorial 1 (T1) – Ethical Issues in Donation BLACK ROOM Using the 'moral balance' tool Exploring either a routine or a delegate's example of ethical decision making	Ethical issues in organ donation Tutorial room 1 Faculty 1 Flip chart/interactive board Projector 1 'Black box' with paperwork	To explore an interactive case-study exploration of ethical scenarios in organ donation that illustrates the use of 'the moral balance model'.
Tutorial 2 (T2) – Pitfalls in Diagnosing Death Using Neurological Criteria An interactive 'pitfalls' in neurological death quiz 'Dead or Not Dead' 2025 quiz	Pitfalls in neurological death testing quiz slide set & voting facility OR separate 'dead' & 'not dead' cards 1 Faculty 1 'Black box' with paperwork	To explore potential clinical situations occurring during neurological diagnosis of death and the rationale for each interpretation.

Participant workshop allocation

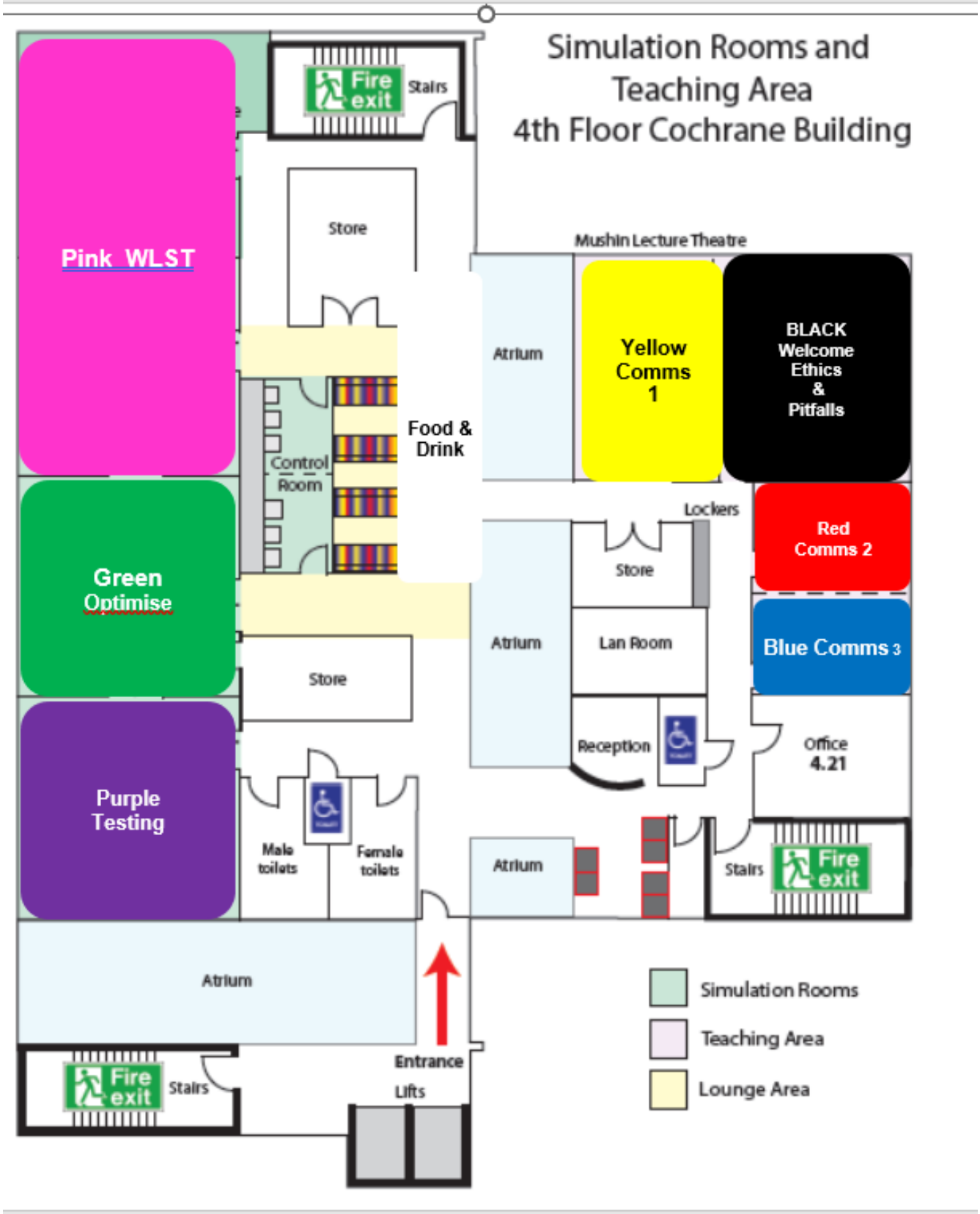
Participant	DBD 1 Explain	DBD 2 Test	DBD 3 Approach	Optimise	DCD 1 Explain and Approach	DCD 2 Withdraw
A	Lead	Assist 2nd Test	Observe	Swap in	Observe	Lead WLST and diagnose death
B	Observe	Perform 1st Test with Faculty	Observe	Start	Lead	Theatre Anesthetist Reintubation
C	Observe	Lead 2nd Test	Lead	Swap in	Observe	Assist & contribute to WLST plan

Site Maps

Belfast

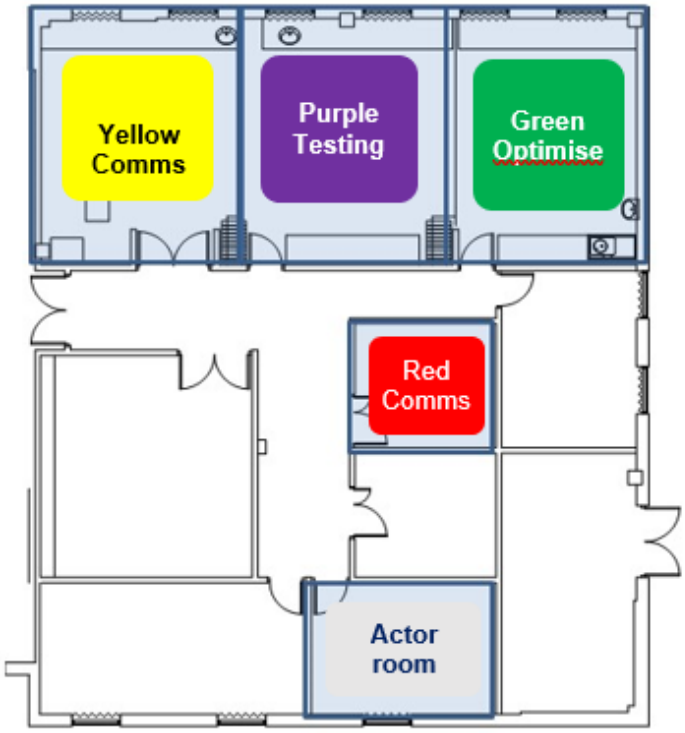


Cardiff


Simulation Rooms and
Teaching Area
4th Floor Cochrane Building
Pink WLST
Fire exit
Stairs
Store
Mushin Lecture Theatre
Atrium
Yellow
Comms
1
BLACK
Welcome
Ethics
&
Pitfalls
Food &
Drink
Control
Room
Lockers
Red
Comms 2
Green
Optimise
Store
Atrium
Lan Room
Blue Comms 3
Store
Reception
Office
4.21
Purple
Testing
Male
toilets
Female
toilets
Atrium
Stairs
Fire exit
Atrium
Simulation Rooms
Teaching Area
Lounge Area
Entrance
Lifts
Fire exit
Stairs

Nottingham

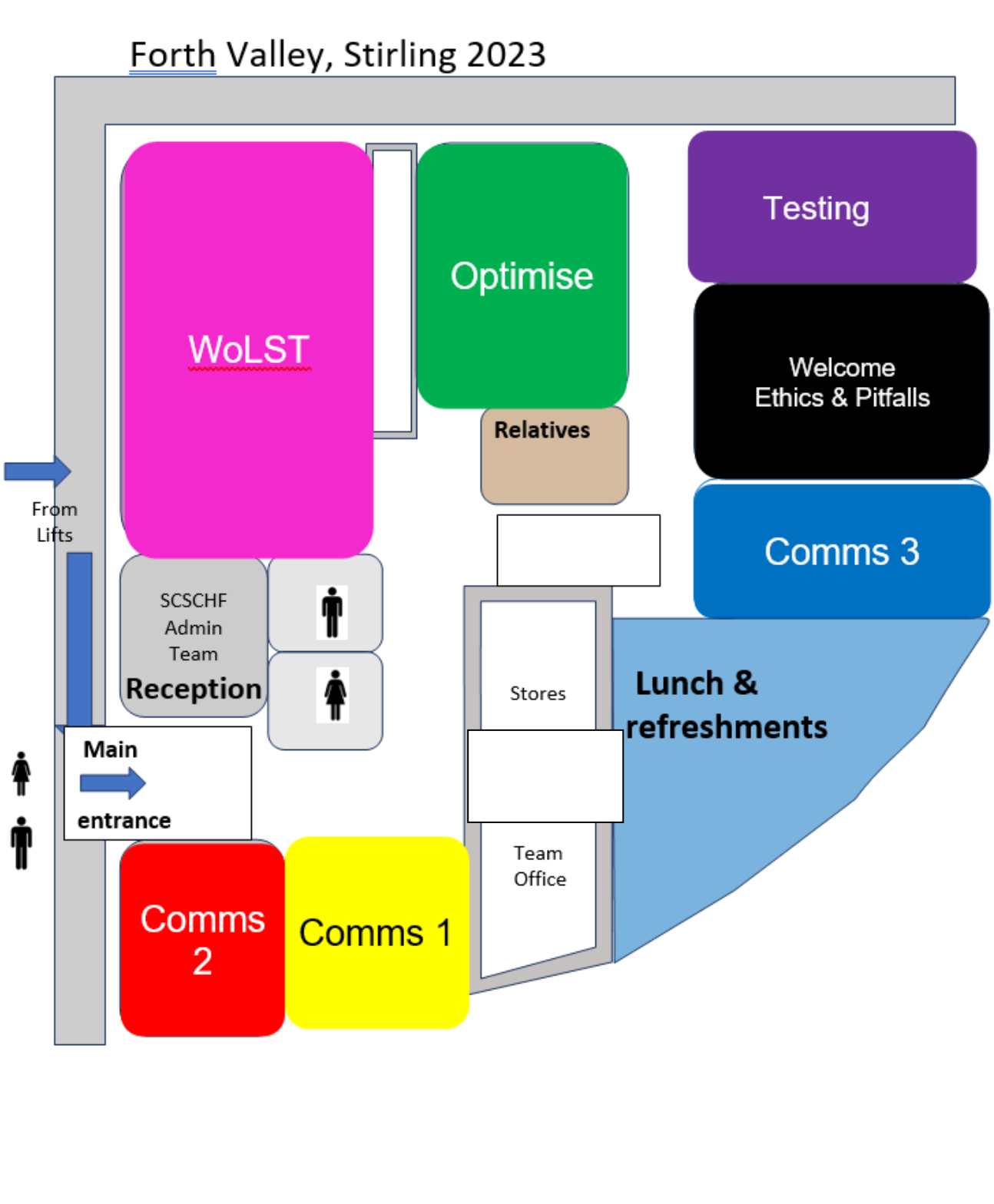
Please note: all rooms in use for this course are highlighted. All communal areas and toilets may be used but not any other rooms.

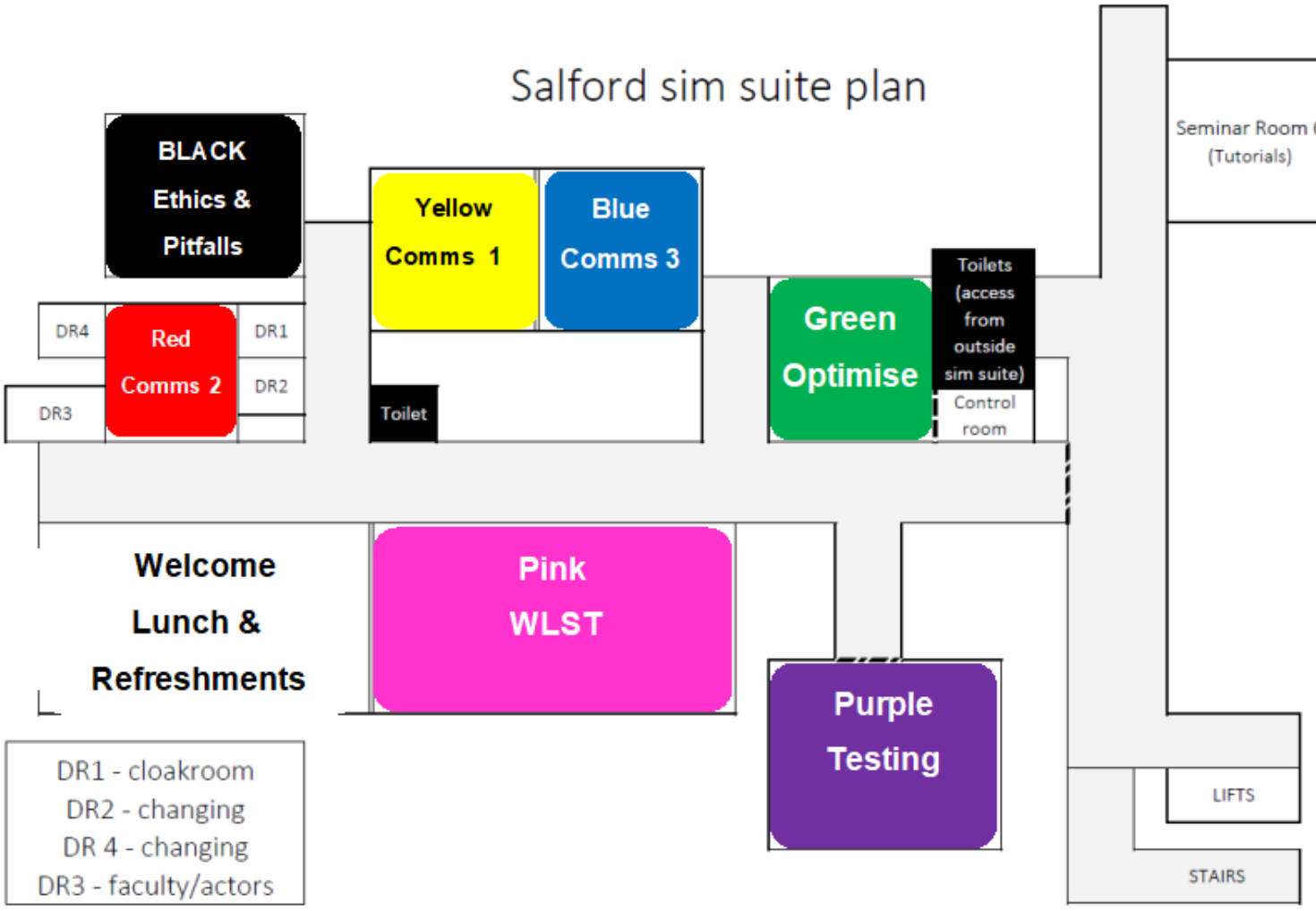


Downstairs

Refreshments and Lunch are served in the vestibule downstairs

Upstairs


Forth Valley, Stirling 2023
WoLST
Optimise
Testing
Welcome
Ethics & Pitfalls
Relatives
From
Lifts
Comms 3
SCSCHF
Admin
Team
Reception
Stores
Lunch &
refreshments
Main
entrance
Team
Office
Comms
2
Comms 1


Salford sim suite plan
BLACK
Ethics &
Pitfalls
Yellow
Comms 1
Blue
Comms 3
Seminar Room
(Tutorials)
DR4
Red
Comms 2
DR1
DR2
DR3
Toilet
Green
Optimise
Toilets
(access
from
outside
sim suite)
Control
room
Welcome
Lunch &
Refreshments
Pink
WLST
Purple
Testing
LIFTS
STAIRS
DR1 - cloakroom
DR2 - changing
DR 4 - changing
DR3 - faculty/actors

Start 08:15		08:30	09:20	10:05	10:25	11:15	12:00	12:50	13:40	14:25	14:45	15:35	16:25
		09:15	10:05	10:20	11:10	12:00	12:45	13:35	14:25	14:40	15:30	16:20	17:00
		Workshop 1	Workshop 2		Workshop 3	Workshop 4		Workshop 5	Workshop 6		Workshop 7	Workshop 8	
Groups	1	DBD1 (A)	Testing	Refreshments	Pitfalls	Optimise	Lunch	DBD 3 (A)	Ethics	Refreshments	DCD1 (C)	DCD 2 WoLST	Plenum conclusion, evaluation, and feedback: Faculty debriefing
	2	DCD 2 WoLST	DBD1 (A)		Testing	Ethics		Optimise	DBD 3 (A)		Pitfalls	DCD1 (C)	
	3	DCD1 (C)	DCD 2 WoLST		DBD1 (A)	Testing		Pitfalls	Optimise		DBD 3 (A)	Ethics	
	4	Pitfalls	DCD1 (C)		DCD 2 WoLST	DBD1 (A)		Testing	Ethics		Optimise	DBD 3 (A)	
	5	Pitfalls	Ethics		DCD1 (C)	DCD 2 WoLST		DBD 1 (B)	Testing		DBD 3 (B)	Optimise	
	6	Optimise	Ethics		Pitfalls	DCD1 (C)		DCD 2 WoLST	DBD 1 (B)		Testing	DBD 3 (B)	
	7	DBD1 (B)	Optimise		DBD 3 (B)	Ethics		DCD1 (C)	DCD 2 WoLST		Pitfalls	Testing	
	8	Testing	DBD 1 (B)		Optimise	DBD 3 (B)		Pitfalls	DCD1 (C)		DCD 2 WoLST	Ethics	
Actor Pairs	A	DBD 1	DBD 1		DBD 1	DBD 1		DBD 3	DBD 3		DBD 3	DBD 3	
	B	DBD 1	DBD 1		DBD 3	DBD 3		DBD 1	DBD 1		DBD 3	DBD 3	
	C	DCD 1	DCD 1		DCD 1	DCD 1		DCD 1	DCD 1		DCD 1	DCD 1	
Rooms	Family	1	2		3	4		1	2		3	4	
	Testing	8	1		2	3		4	5		6	7	
	Optimise	6	7		8	1		2	3		4	5	
	Family	7	8		7	8		7	8		7	8	
	Family	3	4		5	6		5	6		5	6	
	WoLST	2	3		4	5		6	7		8	1	
	Tutorials	4&5	5&6		1&6	2&7		3&8	1&4		2&7	3&8	

Start 08:15		08:30 09:15 Workshop 1	09:20 10:05 Workshop 2	10:05 10:20	10:25 11:10 Workshop 3	11:15 12:00 Workshop 4	12:00 12:45	12:50 13:35 Workshop 5	13:40 14:25 Workshop 6	14:25 14:40	14:45 15:30 Workshop 7	15:35 16:20 Workshop 8	16:25 17:00
Groups	Optimise	Optimise Group 6	Optimise Group 7	Refreshments	Optimise Group 8	Optimise Group 1	Lunch	Optimise Group 2	Optimise Group 3	Refreshments	Optimise Group 4	Optimise Group 5	Plenum conclusion, evaluation, and feedback: Faculty debriefing
	Testing DBD2	Testing Group 8	Testing Group 1		Testing Group 2	Testing Group 3		Testing Group 4	Testing Group 5		Testing Group 6	Testing Group 7	
	WoLST DCD 2	WoLST Group 2	WoLST Group 3		WoLST Group 4	WoLST Group 5		WoLST Group 6	WoLST Group 7		WoLST Group 8	WoLST Group 1	
	Comms 1	DBD 1 Group 1	DBD 1 Group 2		DBD 1 Group 3	DBD 1 Group 4		DBD 3 Group 1	DBD 3 Group 2		DBD 3 Group 3	DBD 3 Group 4	
	Comms 2	DBD 1 Group 7	DBD 1 Group 8		DBD 3 Group 7	DBD 3 Group 8		DCD 1 Group 7	DCD 1 Group 8		DCD1 Group 1	DCD 1 Group 2	
	Comms 3	DCD 1 Group 3	DCD 1 Group 4		DCD 1 Group 5	DCD 1 Group 6		DBD 1 Group 5	DBD 1 Group 6		DBD 3 Group 5	DBD 3 Group 6	
	Ethics & Pitfalls	Pitfalls Groups 4&5	Ethics Groups 5&6		Pitfalls Groups 1&6	Ethics Groups 2&7		Pitfalls Groups 3&8	Ethics Groups 1&4		Pitfalls Groups 2&7	Ethics Groups 3&8	

SN Timetables: A minimum of 4 SNs/ SNs are required. Where there are 8 SN add one to each group but rotate at lunch time so that delegates get the opportunity to work with more than one as is usual in real clinical situation. The priority is to cover is the 3 communication rooms and WoLST at all times.

4 SNs available	1	DBD1	DBD 1		DBD 1	DBD 3		DBD 3	DBD 1		DBD 3	DBD 3
	2	WoLST	DCD 1		WoLST	DBD 1		WoLST	DCD 1		WoLST	DBD 3
	3	DCD 1	WoLST		DCD 1	WoLST		DCD 1	WoLST		DCD 1	WoLST
	4	DBD 1	DBD 1		DBD 3	DCD 1		DBD 1	DBD 3		DBD 3	DCD 1
5 SNs available	1	DBD1	DCD 1		WoLST	Optimise		DBD3	DCD 1		WoLST	Optimise
	2	Optimise	DBD1		Optimise	DBD3		DCD 1	WoLST		Optimise	DCD 1
	3	DBD 1	Optimise		DBD 3	DBD 1		DBD 1	Optimise		DBD 3	DBD 3
	4	WoLST	DBD 1		DCD1	WoLST		Optimise	DBD 3		DCD 1	WoLST
	5	DCD 1	WoLST		DBD 1	DCD 1		WoLST	DBD 1		DBD 3	DBD 3
6 SNs available	1	DBD1	Optimise		Testing	Optimise		DBD 3	Testing		DCD 1	WoLST
	2	DCD 1	WoLST		DBD1	Testing		Optimise	DBD 1		DBD3	DBD 3
	3	Testing	DCD 1		WoLST	DBD 1		DBD 1	Optimise		DBD 3	DBD 3
	4 * can offer late start	Optimise	Testing		DCD 1	WoLST		DCD 1	WoLST		Optimise	DCD 1
	5* can offer early finish	DBD 1	DBD 1		DBD 3	DCD 1		WoLST	DBD 3		Testing	Optimise
	6	WoLST	DBD 1		Optimise	DBD 3		Testing	DCD 1		WoLST	Testing
7 SNs available	1	DBD1	Optimise		Testing	Ethics		DBD 3	Ethics		DCD 1	WoLST
	2	DCD 1	WoLST		Optimise	DBD1		DBD 1	Testing		DBD 3	DBD 3
	3* potential Late start	Pitfalls	DBD1		DCD 1	WoLST		Optimise	DBD 3		Testing	DCD 1
	4 * potential early finish	DBD 1	Testing		DBD 3	DCD 1		WoLST	Optimise		Pitfalls	Ethics
	5	Optimise	DCD 1		WoLST	Ethics		DCD 1	WoLST		Pitfalls	Testing
	6	WoLST	DBD 1		Pitfalls	DBD 3		Testing	DCD 1		WoLST	Optimise
	7	Testing	Ethics		DBD1	Optimise		Pitfalls	DBD 1		DBD 3	DBD 3

Workshop: DBD 1 Explaining Testing (45 minutes)

DBD Scenario Outline
Explaining a plan to test to confirm death using neurological criteria and safe 'parking' of early mentions of donation – communications

DBD 1 The group will explain neurological death testing to the patient's family.

DBD 2 The group will test the patient to diagnose death using neurological criteria

DBD 3 The group will return to the patient's family (same actors, same Specialist Nurse) and explain the results of testing and approach for organ donation.

Patient profiles:

Patient Margaret Wilkinson

Key moments & objectives:

1. Faculty will show participants, a 2-minute video vignette regarding Margaret, a woman in her forties in the intensive care with subarachnoid haemorrhage, who is suspected to fulfil the criteria for neurological death.

2. Participant **(A)** should be able to demonstrate effective planning with the Specialist Nurse and ITU nurse setting out how they will break bad news, explain the need for the tests and what they are expected to demonstrate plus what the plan is should organ donation be mentioned. This should be in the presence of the delegate group.

3. Participant **(A)** should be able to demonstrate the explanation to Margaret's relatives the intensive care plan to carry out neurological death testing, what testing involves and the implication of the tests- that it is likely to confirm Margaret's suspected death**.**

4. Participants will be able to demonstrate safe parking of any early mention of donation either individually themselves or by transitioning to the Specialist Nurse

Room set up:

Personnel:

1 CLOD Faculty
1 PDS faculty
1 Doctor (participant **A**)
1 ICU Nurse
1 Specialist Nurse
2 Actors
TOTAL(min)= 7 + 2 other delegates = 9 minimum
(provide 10-12 chairs in total)

Facilities/Equipment

- Quiet Room
- Chairs for: 2 actors, 1 doctor, 1 ICU nurse, 1 Specialist Nurse. Chairs arranged facing each other or in small circle.
- Chairs behind doctor (so not in doctor's view) for: 1 faculty 1 PDS faculty, 2 additional participants and any other observers.

- Monitor/ screen to play the introductory video vignette of Margaret to the group PDS or SN will provide their hybrid/iPad if this cannot be supported.
- Actor, Specialist Nurse and ITU nurse brief given prior to the course.
- Planning tool
- Debriefing sheets See Appendix A
- Legislation guidance for all UK territories

Scenario Set Up

Scenario Margaret:
The video vignette will be of Margaret, a female in her 40s who has collapsed at home bringing the washing in. She was intubated at the scene in presence of family by paramedics with GCS 3/15. She had complained of a severe headache but went outside to bring in some laundry. She was heard to cry out, then immediately found collapsed, barely breathing. No seizures. No drugs.
In ED, GCS 3/15, pupils 6 and fixed bilaterally. No obvious spontaneous respirations, hypertensive but stable. CT scan revealed overwhelming subarachnoid haemorrhage with early coning. Discussion with neurosurgery, 'unfortunately a hopeless situation, no neurosurgery possible. Suggest admission to ITU for prognostication and possible neurological death testing'.

The patient was admitted to ICU from the ED for potential neurological determination of death.

It is now the next morning, 18 hours since her collapse and the clinical situation has not changed. She is on low dose noradrenaline and has had a single dose of DDAVP.

The doctor (Participant **A**), the ICU nurse (who is caring for this patient) and the Specialist Nurse attending are meeting Margaret's family for the first time.

The family were told of a plan to test Margaret's neurological function this morning but have not grasped the full implication, although they know it is likely to be bad.

The Specialist Nurse has checked the Organ Donor Register and Margaret has 'opted in' for all organs and tissues with no restrictions. The family have not raised organ donation. The actors will be asked to act thus: The 'husband' or partner is quiet, stunned and not yet engaging in what is being said. The 'sister' or sibling will do most of the talking and will mention that Margaret is on the organ donation register **AFTER** the tests are explained but **BEFORE** they are undertaken.

The doctor's role is to explain to Margaret's relatives that the clinical plan is to carry out neurological death testing (previously known as brainstem death testing), what that testing involves and explain the implication of each test that confirms Margaret's suspected death. In response to the raising of organ and tissue donation by relatives, the participants should safely 'park' the discussion or transition to the Specialist Nurse who will do the same. **In your set up, the mention of organ donation by the family should NOT BE REVEALED to the participants -for realism**

Actor Brief

Margaret:

20 minutes role play, 20 minutes debrief (approximately)

You are Margaret's two main relatives. Your age and sex will determine what relationship you will have on the day.

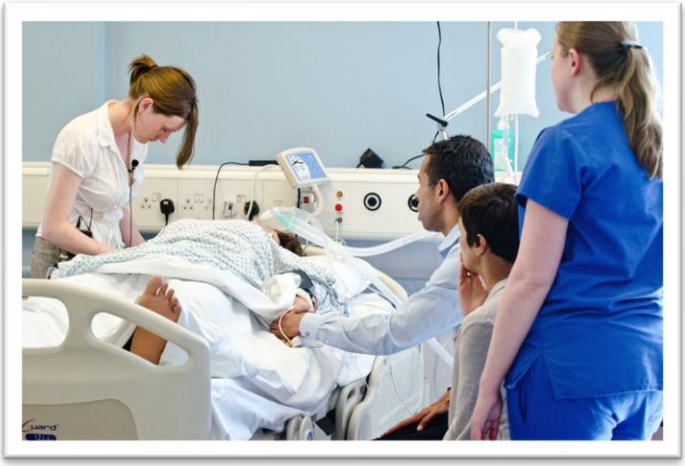
Margaret complained of a severe headache but went to bring in the washing. You were both present. She cried out and when you went to her, she was collapsed and barely breathing.

You rang the ambulance, and they arrived within ten minutes. They put a breathing tube in her mouth and took her to the Emergency Department.

A doctor told you that Margaret would be taken to Intensive Care overnight and that tests on her brain were likely to be carried out this morning. You have been told she may die.

It is now the **next day**; you have barely slept, and Intensive Care doctors and nurses are going to come and update you on Margaret's condition and their plan to carry out tests on her brain.

In this workshop doctors will explain these neurological tests to you. If you do not understand what you are being told you should ask questions to help you come to an understanding.



Husband/partner: Is quiet, head down and disengaged, because they are shocked and not yet accepting of the events.

Sister/sibling: Is more able to talk and more accepting of the situation. AFTER the doctor explains about the neurological tests they are going to carry out this morning, the sister/sibling mentions that they knew Margaret was on the organ donation register and asks if this is possible given what you have been just told.

React naturally. You are distressed and devastated, but not overwrought. Intrinsically you trust the doctors. **Do not be angry** the vast majority of families aren't.

It is likely the doctor may ask you to tell them what you know or what you may have been told already (see above).

Questions you might ask:"Could she recover? "Could we [the family] have done more?" 'Could she be an organ donor?' (They should acknowledge your request give it importance but explain that the tests need to be completed first to establish the diagnosis. You trust that they will guide you)

You may be offered a chance to observe the tests. **You should decline, saying you trust the doctors.**

The Deceased Donation Course (ICM) Learning Objectives for Explaining Death determined using Neurological Criteria

1. Demonstrate an understanding of how the neurological standard for the determination of death satisfies our overarching criteria for death as the irreversible loss of the capacity for consciousness combined with the irreversible loss of the capacity to breathe.
2. Ability to present this information in an intelligible way to the layperson.
3. Ability to recognise the need for precision and certainty in the language that they use when talking to families.
4. Have insight into the difficulties that some family members have when being overloaded with information at a difficult time, in which they may be emotionally and physically exhausted and cognition is impaired.

Faculty Debriefing (approx. 20 mins)

- Work collaboratively with the PDS faculty to debrief, this is where the learning occurs
- Involve the actors to contribute to the feedback.
- There will be a proforma to help guide your debriefing. **See Appendix A**
- Please ensure you have read the article 'Debriefing with good judgement' on the faculty website page linked here

Notes to aid debriefing:

Communication style feedback

Accuracy – Were the facts correct mindful that simulation requires flexibility
Brevity – Was time allowed for family to speak, did the doctors waffle (danger of becoming inaccurate)
Clarity – Was the doctor clear and used unambiguous language. Were 'death' and 'dying' words used?
Delivery – Was the bad news delivered with care and empathy. At a pace that mirrors that of the family, were appropriate introductions made?
Empathy – Was an empathetic discussion made and expression of sorrow for the family?

Essential topics to discuss. see Appendix B

- The doctors should have explained to relatives:
    1. The intensive care plan to carry out neurological death testing,
    2. What this testing involves
    3. Explain the implication of each test that confirms a suspected death.
    4. Parked safely any early mention of organ and tissue donation.
- How to explain a neurological death to family's pre-test.
- Language. In most cases 'Death' **should /must** be mentioned, however in some African cultures using 'death is highly offensive, and that difference should be respected and language adapted where sensitivities are identified
- Neurological death is not a different sort of death, but a different way of determining death.
- Role of the Specialist Nurse (Specialist Nurse can assist in this discussion supporting the family's understanding of the tests & preparing them to witness)
- Why organ donation should be parked at this point, until the clarity of diagnosis is made and family acceptance evident.
- Importance of establishing trust even if the family do not fully understand.

Potential additional topics to discuss.

- Knowledge of ODR at this point to be able to acknowledge known desires (or not) to donate (NB some children/adolescents are added by parents earlier in their life)
- Recovery from neurological death
- Family observing neurological testing.

Explaining Neurological Death to families pre-testing

Key points that are good to communicate

1. The brain injury is so severe that death is suspected to have already occurred.
2. There is a plan to carry out a set of tests to see if the patient will ever regain any consciousness or ever breathe again.
3. If the tests confirm that these essential brain functions are permanently lost; this will mean the patient has died.
4. The tests will be done carefully by two senior doctors.
5. The tests will not hurt the patient.
6. The tests will be done at the bedside by examining the patient and as part of the tests the patient will be removed from the breathing machine whilst receiving oxygen to see if the patient can breathe.
7. The set of tests will be done twice.
8. There is an opportunity for families to observe the second set of the tests, if desired.
9. If the tests do not show the presence of any of the essential brain functions, it will confirm that death has already occurred.

The order in which these key points is relayed will vary according to individual style and should be guided by paying careful attention to family reactions.

Rationale

1. The essential message is the suspicion that death has already occurred, and tests are going to be undertaken to confirm this suspicion.
2. Avoids any mention of the confusing term ‘brainstem death’ or ‘brain death’ that is loosely used in the media and difficult conceptually to explain even for doctors. The Academy of Medical Royal Colleges (AoORC) Code of Practice (2025) does not use either term but instead refers to the **‘**Diagnosis and Confirmation of Death in a Patient in Coma**.’**
3. ‘Essential brain functions’ and the link to these being the capacity for consciousness and the capacity to breathe: this is in line with AoOR2C, *“Death entails the irreversible loss of those essential characteristics which are necessary to the existence of a living human person and, thus, the definition of death should be regarded as the irreversible loss of the capacity for consciousness, combined with irreversible loss of the capacity to breathe.”*
   As a country that accepts neurological death versus whole brain death, an emphasis on essential brain functions does not preclude that other brain functions may persist (eg anti-diuretic hormone production) just that these other brain functions are not essential for the capacity for consciousness or the capacity to breathe.
4. ‘Two senior doctors’ emphasises the importance in which the tests are being considered and the second opinion this brings.
5. Reassurance the tests will not hurt the patient. It is important the apnoea test is done last in any set of tests to ensure no brain stem reflexes are present before exposing the patient to a raised carbon dioxide level.
6. A short explanation of the tests with the emphasis on the apnoea test, which it is believed important in helping families understand and accept that death has occurred.
7. The tests will be done twice, again to emphasise the importance in which the tests are being considered.

8. An opportunity to witness the tests is provided. It is believed that witnessing the tests may be helpful in helping some families understand and accept that death has occurred. It also encourages trust. It is usually recommended to let the family observe the second set of tests, with Specialist Nurse support giving explanations if required, as this enables the doctors to carry out the first set with less distraction. When reflexes are more likely to be present and gives knowledge with which to prepare family if reflexes are pronounced. Specialist Nurse support allows the family to be attended to without distraction to the process.

Other information that could be relayed in on-going discussion with the family.

a. Consciousness as arousal / wakefulness and awareness (thoughts and feelings)
b. They will never wake up and never recover.
c. It's only the machine that is pushing air and oxygen in for the patient and only because of this machine and the delivered oxygen to the lungs, the is the heart still beating. If we were to turn off the machine the patient would not breathe, and the heart would stop.
d. No one who has had these tests performed correctly has ever woken up or breathed again anywhere in the world.
e. Media reports are usually mistaken, or the tests were done incorrectly.
f. Persistent vegetative states and deep coma are different.
g. The anatomical location of these essential functions is in the brainstem, where the cranial nerves also arise. Which is why examination of the brainstem reflexes allows conclusions about these essential functions to be made.
h. Spinal reflexes may be present.
i. Acknowledging that what is being described is commonly referred to as brainstem dead or brain dead; but often this term is used wrongly in the media.
j. Showing the CT scans and the use of other visual aids can help explanations and understanding.

An example 'lead' discussion

Accepting that individual styles may vary, and rote quoting of any text would appear forced and unnatural, the below paragraph is offered. It is vital that family reaction and understanding is assessed as the information is relayed, and if there are points of confusion or distress, or the information is too overwhelming, that further explanation or time is given before proceeding.

The imagined case is for Margaret a woman in her forties who had an overwhelming subarachnoid haemorrhage, who is in intensive care awaiting testing.

"As you know, Margaret has had a very bad bleed in her brain. As you saw, she lost consciousness almost immediately and the paramedics had to put the breathing tube in because she was no longer breathing for herself. Since coming to hospital, we have not seen her breathe and many of her brain functions appear to have stopped.

The scan of her brain is very abnormal and devastating. My fear is that the damage Margaret has sustained to her brain, is so severe, that she may have already died.

Another senior doctor and I are planning to carry out some tests on Margaret to see if she will ever regain any consciousness or ever breathe again. If the tests confirm that these essential brain functions are permanently lost, this will confirm to us, that she has died.

The tests won't hurt Margaret. One of these tests will be to shine a light in her eyes to see if the pupil gets smaller, much as the nurses have already been doing on the intensive care.

We will also take her off the ventilator, whilst giving some oxygen to see if she can breathe by herself.

The tests will be done twice. We'll do the first set of tests shortly, but we'll give you the chance to watch the second set of tests if you wish. Some families find this helpful, to see for themselves.

I'm very sorry; but I expect the tests will confirm that she has already died.'

Similarly, if donation is mentioned phrases to help 'park' that conversation until death has been confirmed can be used to manage the situation so that acceptance of death can be ascertained.

'Parking' Donation and introducing the specialist nurses

Thank you for raising organ donation. It is very important that we talk about these things especially to know Margaret's decisions around end of life. We will respect and talk about all of those things soon when the time is right, however at this stage we are concentrating on completing the tests so we can get our diagnosis correct. Once we have completed the tests, we will speak to you again about this and build a picture of what her end of life care could look like taking in to consideration your family needs too.

The Specialist Nurse can be identified as, 'a specialist who, as part of the team, is the person who can help you with all of your decisions and guide and support you once we have completed the diagnosis'.

Video Vignette script

Black screen with white words, silent

"Margaret a middle-aged female collapsed at home.

She was intubated at the scene, without drugs, in the presence of her family, by paramedics.

She was brought into your hospital".

Her family say she had complained of a severe headache but went outside to bring in some laundry. They heard her cry out and found her collapsed and barely breathing. They saw no seizures and she had taken no drugs."

Video footage of her in ED and people bustling around.

Words

"In the Emergency Department she is GCS 3/15 and her pupils are 6 and fixed bilaterally. No obvious spontaneous respirations are observed. She is hypertensive and polyureic but stable.

A CT scan is carried out…."

CT scan revealed 'overwhelming subarachnoid haemorrhage with early coning'. Discussion with neurosurgery, 'Hopeless situation, no neurosurgery possible. Suggest 'proceed to brain stem testing.'

The patient was admitted to ICU from the ED to plan for brainstem death testing.

It is now the next morning, 18 hours since her collapse and the clinical situation has not changed. She is on low dose noradrenaline and has had a single dose of DDAVP.

The doctor (participant), the ICU nurse (who is caring for this patient) and the embedded Specialist Nurse for this hospital are meeting Margaret's family for the first time.

The family were told of a plan to test Margaret's brain function this morning but have not grasped the full implications but know it is likely to be bad.

The Specialist Nurse has checked, and Margaret is on the Organ Donor Register via the DVLA with no restrictions. The family have not raised the topic of organ donation and the actors have been told not to raise it.

The doctor's role is to explain to Margaret's relatives the intensive care plan to carry out testing to see if she will ever regain essential brain functions, what the testing involves and explain the implication that the tests are being done to confirm Margaret's suspected death.

Workshop: DBD 2 Testing (45 minutes)

DBD Scenario Outline
Online video series HERE

Testing: diagnosing death using neurological criteria – interactive tutorial with a simu;ation mannequin

DBD 1 The group will explain neurological death testing to the family.

DBD 2 The group will test the patient to diagnose death using neurological criteria

DBD 3 The group will return to the family (same actors, same Specialist Nurse) and explain the results of testing and approach for organ donation.

Patient profile:

Patient Margaret Wilkinson
Key moments

1. This workshop continues the story of Margaret, a female in her forties with subarachnoid haemorrhage, who is planned for testing.
2. The group will have explained diagnosing death using neurological criteria to Margaret's family (Groups 4,5,6, 7 & 8 will have done *Tutorial 2: Pitfalls in Diagnosing Death Using Neurological Criteria* prior to this workshop, groups 1,2 and 3 will not have).
3. There is an opportunity for all three participants to be involved in the neurological death tests.
4. For the first set of tests, the faculty member will instruct Participant (B) through a set of tests as a tutorial.
5. The second set of tests will be conducted by the remaining two participants: with minimal faculty input. Participant (C) will perform the tests and Participant (A) will assist (by filling in the form and offering instruction as required).
6. In the second set: death tests to be performed in full and, if desired, in real time to include a five-minute apnoea test (although average apnoea test with new 2025 guidance appears around 8 minutes) .
7. **From the pre and post course survey with answers**

The three components required to diagnose death using neurological criteria are:
Established aetiology
Exclusion of reversible conditions
Clinical Testing

Room set up:

Personnel
1 Faculty
3 Doctor (participants)
1 ICU Nurse
A Specialist nurse may join this station. TOTAL = 5/6 minimum

Facilities

- Room set up: ventilated ITU ‘female’ patient mannequin on bed as if in ITU.
- Participants stand around the bed/mannequin.
- Chairs for observers

Equipment for testing ‘PURPLE’ room

- **Forms for the diagnosis of death using Neurological Criteria Adults and Children over 2 years Jan 2025. X24**
- Paediatric forms x4 copies available for awareness of differences.
- Guidance for testing on ECHMO for awareness x4

For each room PURPLE ADULT

- **PURPLE ROOM:** Patient ventilated via cuffed ETT on an ICU ventilator (‘oxylog’ could be used) as an adult female to match that of the GREEN ROOM mannequin
- ICU Chart
- Drug Chart
- Blood Results
- Debrief sheet for reference.
- Guidance ‘walk through’ sheet 2025
- Torch
- Gauze/ Cotton Wool / 0.9% Saline drops
- Suction Catheter (size appropriate)
- Yankeur Suction wand (size appropriate)
- Otoscope with working torch
- Cold water with faux ice if available & 50ml syringe with ‘quills’ or flexible cannula
- Example ABG for pre testing, pre and post apnoea tests for both sets of testing.
- C circuit and oxygen tubing
- Inco pads
- Kidney dish
- Nerve stimulator if available
- Tongue depressor

Scenario set up:
Margaret Wilkinson
Margaret is a female in her forties who collapsed at home whilst bringing the washing in. She was intubated at the scene in presence of family by paramedics with GCS 3/15. She had complained of a severe headache but went outside to bring in some laundry. Heard to cry out, found collapsed, barely breathing. No seizures. No drugs.
In ED, GCS 3/15, pupils 6 and fixed bilaterally. No obvious spontaneous respirations, hypertensive but stable. CT scan revealed overwhelming subarachnoid haemorrhage with early coning. Discussion with neurosurgery, ‘‘unfortunately a hopeless situation, no neurosurgery possible. Suggest admission to ITU for prognostication and possible neurological death testing’.

Margaret was admitted to ICU from the ED for prognostication and assessment of a potential neurological death.

It is now the next morning, 18 hours since her collapse and the clinical situation has not changed. She is on low dose noradrenaline and has had a single dose of DDAVP.

The doctor's role is to carry out neurological death testing.
Both sets of tests to be performed.

First Set (25 mins)
For the first set of tests, the faculty member will instruct **Participant (B)** through a set of tests as a tutorial using the 'walkthrough' 2025. The chest / abdomen should be respectfully clear for observation, lightly and simply covered for modesty but absent of bedding.

There should be an opportunity for all present to ask questions.

The neurological death testing form will need to be explained and filled out during the testing.

It is advisory in this period of new guidance embedding that **anticipatory preparation** and familiarisation is made **with the new form** as soon as neurological death testing is anticipated. **Stop, pause, prepare** to prevent user errors and enable diligent planning. 2025 forms, guidance, advice and resources can be accessed via the FICM website.
Diagnosing Death using Neurological Criteria | The Faculty of Intensive Care Medicine

Faculty Brief and Station Running:

Essential Topics of learning

- The rationale for careful preparation and use of 2025 forms with attention to detail of preparation and the 4 pre-conditions.
- Emphasise the importance of establishing 'Evidence for Irreversible Brain Damage of known Aetiology' and the 'Exclusion of Reversible Causes of Coma and Apnoea.' These are the biggest areas where mistakes are made and need the utmost diligence. When in doubt - consult.
- Explanation of each test and what to look for.
- Use the 'walkthrough' 2025 guide to assist your session.

Potential additional topics for discussion

- Family observing neurological death tests.
- Preparing the family for the presence of spinal reflexes.
- Feeding back and communicating challenges as the new form embeds, whether used in cases of non-donation or donation cases
- Length of apnoea test anticipated Current average length of apnoea testing is around 8 minutes.

Second Set (15 mins)
The second set of tests should be conducted by the remaining two participants: with minimal faculty input. **Participant (C) will perform the tests and Participant (A) will assist** by filling in the form and offering instruction as required.

In the second set: neurological death testing to be performed in full and, desirably, in real time including a five-minute representative apnoea test. Current average length of apnoea testing is around 8 minutes.

Try and allow this to feel real to the two participants. This should be sombre with high level concentration second half of the workshop.

Participant (C) will have to explain the result to the family and lead the discussion for organ donation. You should give them warning of this so they can mentally prepare themselves.

DBD2 Station Neurological Death testing

Test 1 = Participant B performs with facilitator. Test 2 = Participant C leads, A supports.

1. To the group ask: how many tests have you performed / seen? Where do you find the 2025 endorsed testing forms? Children?

2. Dr B to write on form (others can read a form each).
Ask: who can test? "G'day, I'm your new GMC registered locum ICU consultant. I've just got off the plane from Australia." Can I test?
Answer: Yes, five years equivalent registration. See how the relevant paragraphs in the Code are provided.

3. What is the aetiology in Margaret? Answer: SAH
What is the neuroimaging evaluation? Answer: CT scan + coning.
What about if there was presumed meningo-encephalitis but one didn't know the exact microbiological organism?
Answer: still ok if both doctors are satisfied that the mechanism of cerebral oedema is consistent with the permanent cessation of brainstem function.

4. Question to ask when testing, if ventilated for a long time would function return or is it too late? **Assessment period sufficient to exclude the potential for recovery.** 6 hours, 24 hours, temperature. Emphasis on accidental (admission), therapeutic. If brainstem reflexes case on ICU than temperature drops that is not accidental hypothermia. Temperature must be 36°C at time of clinical testing.

5. Go to patient records. Check temperature, depressant drugs, could there be neuromuscular weakness + perform TOF. See how each question points to either the Guidance above or the Code.

6. Could Margaret have cervical spine injury? Mechanism unlikely. 3 options if cervical spine #: 1) MRI to show no cord oedema. 2) Ancillary test e.g. CTA. 3) Conclude unsafe to test.

7. Circulatory and respiratory disturbances. **What does 'materially contributing mean'?** Guidance 3.1.

8. Precondition 3 continued. Check against electrolytes, glucose. No need endocrine check unless cause not clear. Being on thyroid replacement or missing a few doses or slightly abnormal results does not mean 'materially contributing.'

9. Precondition 4. Discuss each in turn.

10. Ancillary investigations. Outline when required. Role in mitigating Precondition 3 and 4. What about ancillary investigation in a 1-year-old?

11. Go to mannequin. Emphasise that all the mistakes that have occurred in the world have occurred up to this point. Explain good for families to see the form and not a memory test so ok if 2nd Dr reads off the tests.

Copyright© NHS Blood and Transplant, Professional Development Team 2025 Dr D Gardiner

DBD2 Station Neurological Death testing

Test 1 = Participant B performs with facilitator. Test 2 = Participant C leads, A supports.

12. Simulate placing Margaret on 100% O_2 and reduce minute ventilation.

13. Pupils. Test direct and consensual. Pupils mid-size or larger & fixed. 2 eyes.

14. Cornea. Make sure coloured part is touched. Emphasise every test is **supranormal** and **bilateral** where possible. Repeat this phrase often.

15. Motor response. Expose limbs but look cranial distribution. Glance at monitor to see no hypertension of tachycardia caused (reassuring). How hard do you push? Answer: Like you are in ED with a drunk patient you don't want to intubate. Supranormal & bilateral.

16. Gag. Two ways: Using a laryngoscope directly visualise posterior pharynx and stimulate **bilaterally** or using yankauer (depress tongue to allow some visualisation) **bilaterally** stimulate posterior pharynx.

17. Cough. Expose abdomen. In line suction, ensure supranormal, catheter long enough to stimulate the carina.

18. Vestibulo-ocular. Ears for wax (no need both Drs do both ears). 30° head flexion (horizontal canal into vertical); one minute which is hard for anaesthetists to do. May be easier Drs swap ears. 2 ears.

19. Apnoea test. Check 1st ABG meets requirements. Mapleson C circuit. Make sure Mapleson C not placed on chest (bounces too much).
Calculate target $PaCO_2$.
Highlight why apnoea test done after brain stem reflexes and not during.
Answer: can't concentrate properly and a response to philosophical criticism 'Margaret wasn't dead when you started the apnoea test but she certainly was when you finished'.
Discuss timing 2nd ABG. Check it meets requirements.

20. Completion and timing of death.
What if ancillary investigation after testing?

21. Change to Test 2. Time is limited, skip preconditions. Warn Dr C they will have to go in DBD 3 to explain the findings to the family. **Ask: is this allowed to have four different doctors?**
Answer: Yes. Each pair must meet preconditions.

22. Check their pupil and corneal reflex test. When they get to supra-orbital pressure ask: how would you explain spinal reflexes to the family? Answer: can be helpful to say something like, "We all have reflexes (demonstrate knee reflex), the brain usually suppresses most of these reflexes. Like how a baby has a grasp reflex, but when the brain develops more the reflex stops. But when the brain stops working these reflexes can return. But they aren't part of the brain they are just from the spine (gesture knee to spine and back)." Good to warn all families.

23. During the apnoea test ask, **what transaction is occurring between you and the family if they are observing testing.** Not a knowledge transfer but a transfer of trust. The family won't be expert after watching the test but they should trust that you are. The transparency, time and dignity you are showing helps the family to trust you and accept the diagnosis.
Families need to be supported if observing. SNOD and bedside nurse will help here.

Workshop: DBD 3 Approaching (45 minutes)
Scenario outline: approaching a family after confirming death using neurological criteria – communications.

DBD 1 The group will explain neurological death testing to the family.

DBD 2 The group will test the patient to diagnose death using neurological criteria

DBD 3 The group will return to the family (same actors, same Specialist Nurse) and explain the results of testing and lead the discussion for organ donation.

Key moments
Margaret Wilkinson

1. This workshop continues the story of Margaret, a female in her forties with subarachnoid haemorrhage.
2. The group will have confirmed Margaret's death using neurological criteria in DBD 2
3. Participant (C) will now return to the same original actors and Specialist Nurse as DBD 1, explaining the results of the neurological death testing, how the tests confirm Margaret's death, and transition to an approach regarding organ donation.
4. The three key stages of the approach delegates should demonstrate are:
    a. Planning - Time to plan the approach must be allowed and should be held in view of the other delegates.
    b. Ensuring understanding and acceptance from the family
    c. Discussing donation – this will involve evidence of a positive trusting transition to the Specialist Nurse
5. Margaret is on the Organ Donor Register
6. If the participant transitions to the Specialist Nurse rapidly, especially without raising organ donation themselves, allow the Specialist Nurse to continue for a bit so the participants can see the Specialist nurse 'in action' but don't let it go on for too long. This is a training opportunity for the doctor not the Specialist Nurses. Debrief and perhaps run it again asking the doctor to do this time, raising donation before transitioning to the Specialist Nurse.

The Deceased Donation Course (ICM) Learning Objectives for Approaching Families for DBD when on the ODR

- Recognises the importance of planning and understands what planning involves.
- Knows how to introduce the Specialist Nurse either by introducing at the beginning of the family conversation or introduce the Specialist Nurse when it feels natural to do so in the conversation, either is acceptable.
- Understand the importance of using clear unambiguous language to explain that death has occurred.
- Is willing to use diagrams and scans or invite members of the family to witness the tests, if appropriate.
- Can recognise when a family understands and accepts death before proceeding to discussing donation.
  a: Can recognise when to give family more time to consider the clinical situation.

OR

  b: Can identify when a family who have already accepted the situation and who may be ready to move onto the possibility of discussing donation in the same interview.
- Can naturally transition positively to organ donation and confidently bring in the Specialist Nurse to discuss organ donation.
- Understands the importance of positive language.
- Knows how to alter the language when the patient is on the organ donor register or where family have already expressed a known decision or desire to be an organ donor.
- Understands the SN's expertise in the implementation and use of organ donation law and application to that situation, the process and common concerns.
- Facilitates the involvement of a SN even where different end-of-life decisions may be being planned in parallel.

Personnel

1 Faculty
1 PDS faculty
1 Doctor (participant)
1 ICU Nurse
1 Specialist Nurse
2 Actors

Total = 7 minimum
Plus 2 other delegates =9

Facilities

- Quiet Room
- Chairs /sofas for: 2 actors, 1 doctor, 1 ICU nurse, 1 Specialist Nurse. Chairs arranged facing each other or in small circle as could be seen in an ITU relatives room.
- Chairs behind doctor (so not in doctor's view) for: 2 faculty, 2 additional participants, 1-2 observers (or video link for non-faculty)
- Facility for video recording of discussion if available
- Actor, Specialist Nurse and ITU nurse brief
- Debriefing sheets See Appendix A
- Planning sheet
- Legislation guidance for all UK territories

Scenario
Margaret Wilkinson
Margaret is a female in her forties who collapsed at home bringing the washing in. She was intubated at the scene in presence of family by paramedics with GCS 3/15. She had complained of a severe headache but went outside to bring in some laundry. Heard to cry out, found collapsed, barely breathing. No seizures. No drugs.
In ED, GCS 3/15, pupils 6 and fixed bilaterally. No obvious spontaneous respirations, hypertensive but stable. CT scan revealed overwhelming subarachnoid haemorrhage with early coning. Discussion with neurosurgery, ‘‘unfortunately a hopeless situation, no neurosurgery possible. Suggest admission to ITU for prognostication and possible neurological death testing’.

The patient was admitted to ICU from the ED for prognostication and assessment of a neurological death.

It is now the next morning, 18 hours since her collapse and the clinical situation has not changed. She is on low dose noradrenaline and has had a single dose of DDAVP.
Two sets of tests have now been carried out and death has been confirmed using neurological criteria.

Participant (C) has to explain the results of the testing and how they confirm the death to the same original actors as DBD 1 (the same family) and working with the same Specialist Nurse as DBD 1, as if they were the initial Dr, then transition to an end-of-life discussion with raising organ donation positively**.**

The three key stages of the approach are:

1. Time to plan the approach must be allowed and should be held in view of the other delegates
2. Ensuring equal understanding and acceptance by all relatives
3. End of life and donation discussion – this will involve a positive transition to the Specialist Nurse

Margaret is on the Organ Donor Register her family have raised this already. The husband /partner has been less engaged in the previous discussions and needs to be brought to the same level of acceptance. It is support for Margaret’s decision that will be sought. Digital information sharing may be offered by the specialist nurse or mentioned to support the conversation.

Faculty Debrief **(approx. 20 mins)** **See Appendix A**

Use the actors to contribute to the feedback.

Communication style feedback

Accuracy – were the facts correct? (mindful that simulation requires some flexibility)
Brevity – was time allowed for family to speak? Did the doctor waffle (danger of becoming inaccurate) or over speak?.
Clarity – was the doctor clear and use unambiguous language? Was the D word used (death)?
Delivery – was the bad news delivered with care and empathy? Were appropriate introductions made?
Empathy - Was empathy shown regarding their grief and loss?

Essential topics to discuss:

- The doctor should have planned their approach with the team paying attention to the need to bring each family to a mutual level of understanding, how they will break this news and reacknowledge Margaret's decision and transition to the SN
- Any clinical issues to be clarified, clarified.
- The patient's donation potential and the implications of organ retrieval made.
- Evidence of prior consent/authorisation such as registration on the Organ Donor Register
- Next-of-kin and family leaders to be identified.
- Specific family issues to be understood, including the recognition of the need to involve other parties (e.g. faith representative) or cultural needs.
- Agree who will cover each element of the process and where the transition in responsibility will be.
- The doctor should ensure the relatives have understood and explained the diagnosis of death before discussing donation; that an understanding and acceptance of the death has occurred.
- The doctor should transition to discussing donation and involve the Specialist Nurse for this as the expert in this.
- As **Margaret** is on the organ donor register the language should be more expectant and faciliatory. It is important to avoid any suggestion that the family's permission is also required; the objective here is to describe what will be required for the patient's decision to be respected.
- Language: The D word (death) must be mentioned for clarity
  Donation should be discussed positively and with Margaret's decisions and legacy in mind.

Potential additional topics to discuss

- Role of knowledge of ODR at this point
- NSHBT and MOHAN foundation DBD app for Apple and android phones

Actor Brief

MARGARET WILKINSON

20 minutes role play, 20 minutes debrief (approximately)

You will have spoken to this group earlier when they explained the plan to carry out neurological tests on Margaret that will confirm if she has died. Carry on the conversation using what knowledge you gained earlier.

Though it will be a different doctor from the group who will speak to you, do not let that interfere and treat this unnatural situation, as natural.

The doctor will explain that the tests confirm that Margaret has died.

'Husband'/ partner will ask to have a 'recap' of the tests because you weren't quite taking it all in and you just need to get your thoughts clear because it's hard to accept when Margaret has a beating heart and is warm and the nurses are still doing things for her like she was alive. Fully realising and then accepting she has died will distress you but not shock you as this is what the conversations have prepared you for. A simple recap of the tests will satisfy you.

Husband/Partner after the explanations you might say:

"I knew she was gone when she collapsed".

"Could we have done more to save her?"

"I know you did your best for her".

When you have BOTH given some indication that you have understood and 'accepted' the death, you may then ask, 'what happens next' or 'do you just turn her off now'.

The doctor should acknowledge the earlier conversation when Margaret's sibling mentioned donation and begin to discuss this but then transition to the Specialist Nurse to give guidance and information.

You should react positively and be keen to support Margaret's decision but have questions about how that happens, what the process involves and what can be donated. You would likely be thinking of other things too and these could also be a focus, the funeral, telling relatives, getting something to eat or getting back to a commitment you have at home that you said you would do.

If the doctor continues to discuss donation themselves ask more difficult questions like 'do you know if we would hear from recipients once they have had their transplant?' 'how quickly might we know that sort of information?' 'Can we raise money at the funeral for Organ Donation?'

Workshop: Optimisation (45 minutes)

This station may be run as a true simulation giving delegates a pre-brief of assessment post neurological death test and allow the scripting to play out and delegates react, followed by a debrief
OR
Run as a group 'workshop' where the same scenario is played out with challenges presented and debated as delegates are taken through a systematic approach (A,B,C,D,E) of donor management and optimisation.

The Deceased Donation Course (ICM) Learning Objectives for Optimising the DBD Consented Donor

1. **Knowledge**
    a. There is a donor care optimisation bundle, used immediately following neurological death testing until family support for donation or otherwise is established and continued if donation is to be supported.
    b. The Donation Actions Framework is available and can support ethical decision making in this arena particularly in more unusual conditions. Donation Actions Framework - ODT Clinical - NHS Blood and Transplant.
    c. Five priorities
        1. Lung recruitment manoeuvres
        2. Assessment of fluid status and correct hypovolaemia with fluid boluses
        3. Preference for use of vasopressin infusion for inotropic support where required, introduction of cardiac flow monitoring to guide interventions, where expertise and opportunity require and allow, particularly in cardiothoracic donation.
        4. Identify, arrest and reverse effects of *diabetes insipidus.*
        5. Administer methylprednisolone (all DBD donors)

    d. Role of other inotropes / flow monitoring
    e. Role of other hormones
    f. Goals are ICU normal and set out within the care bundle..
    g. Role of SCOUT Team if available
    h. Impact of optimisation care on the transplanted organs
    i. Resolving neurogenic pulmonary oedema

2. **Skills**
    Along with the Donation Actions Framework, practice using the donor care optimisation bundle, the principles of donor optimisation to establish and support donors to donate optimally, both as many organs as is possible and of the highest quality.

3. **Attitude**
    - Appreciating that 'Caring' and not walking past and ignoring the 'dead' or 'donor' patient is the first step.
    - Appreciating DBD patients need ICU care, sometimes even a great deal of care.
    - Appreciating that whilst donor optimisation has the same goals as standard ICU care, there may be challenges during a donation where this may seem to

be exceeded in support of a recipient's need. The Donation Action Framework can be used to rationalise, support or refute requested actions.

Scenario outline:

The guiding principles are that the participants are presented with a consented donor who has given consent themselves via the organ donation register (ODR), supported by the family who have given consent/authorisation to organ donation and any 'pre-death' procedures (Scotland).

If consent/authorisation is established or support for donation is agreed verbally with family, until written consent/authorisation is achieved, any interventions to support a patient's optimisation for donation must be explained and agreed with the family verbally then documented as part of the written consent/authorisation explanations by the Specialist Nurse. The Specialist Nurse would be expected to have a working knowledge of the law that covers interventions for donation. They are also expected to work collaboratively, discussing and negotiating with clinicians, and family supporting a donation, any interventions that they identify as potentially necessary that would support donation but were not already agreed or prescribed. The Donation Actions Framework can assist to support actions or inactions made for a particular donor.

There should be a distinction made between stabilisation for the purposes of testing for diagnosing death through neurological criteria for death, stabilisation of a potential DBD or DCD donor to enable end of life decisions to be ascertained with the family, or because a patient has a known decision to donate, and that of optimising a donor where consent/authorisation has been established. This is explored in some detail in the Donation Actions Framework and ethics sessions on day1. Ethical discussions may well be raised within this station by delegates.

In Scotland, pre-mortem interventions are distinguished between Type A – those that establish the safety and likely success of a donation without which donation could not occur and Type B – those more invasive tests & procedures if routine tests are insufficient to establish the same.

Guidance for Scottish legislated actions will be available in the station box or here via this link

Issues to consider

- The role of 'Good ICU care' in donation and the shift of emphasis of care outcomes.
- The role of supporting a positive ward round that is positively inclusive of donor patients.
- Optimisation interventions, pharmaceutical or otherwise, that support and impact on stability and donation may have ongoing impact for any transplanted organ. Actions should be considered and instigated proactively for good donation outcomes wherever possible.
- DNAR implications, especially where death is established.
- Ethical components of treating during these periods
- Involvement with Specialist Nurses and families in respecting the donor's decision to donate during this period.
- Use of the donor optimisation app and bundle and Donations Actions Framework https://ics.ac.uk/resource/donation-actions-framework.html or https://www.odt.nhs.uk/deceased-donation/best-practice-guidance/donation-actions-framework/
- Specialist Nurses involvement and support in optimising

- Communicating and clarifying objectives.

Key Points

Donor Care Bundle: Explain and justifying of the bundle.

Discussing the Optimisation Ethos

- Donors need good intensive care
- A usual A,B,C, D,E approach can be just as effective in donor care as in every other aspects of intensive care, and is followed the bundle
- If you first CARE, action will follow.
- Role of SCOUT team (where available)
- Specialist Nurses are now offered 2 levels of training in optimisation, entry level as part of their initial training and a higher level for more experienced practitioners. A further expert level for those with skills and interest in this area of their practice and where a Scout service is not yet available but will follow.

Scenario Set up:

Personnel 1 Faculty
3 Doctor (participants)
1 ICU Nurse
1Specialist Nurse =6 personnel (minimum)

Room set up:

Facilities 1 High fidelity simulation ventilated mannequin on bed
+ sim tech operator
Chairs for observers

Equipment

- 'Green box'
- ICU Chart
- Drug Chart
- Blood Results
- Care bundle sheets.
- Debrief sheet for reference.
- Deterioration script for sim technicians See Appendix D
- Guidance on Scottish legislation Type A and Type B premortem interventions
- Flash cards to assist communication with the sim tech manipulating the mannequin 'reactions'.
- Labelled Fluids
- Syringe drivers, syringes and giving sets. Labels or pre-labelled

NHS Blood and Transplant

Donation after Diagnosis of Death using Neurological Criteria (NC)

Donor Optimisation Care Bundle

Name.....
DOB.....
MRN.....

Patient Name ..... DOB ..... MRN ..... Weight ..... Height .....

IMMEDIATELY AFTER DIAGNOSIS OF DEATH

- Perform lung recruitment manoeuvre.
- Set tidal volume to 4-8mls/kg (ideal body weight).
- Set optimum PEEP (5 to 10cm H20).
- Add vasopressin (0.48 to 4U/hr), where vasopressors are required. Wean noradrenaline.

Time of death..... Signed..... Name..... GMC.....

WITHIN 1 HOUR OF CONSENT/AUTHORISATION

- Administer methylprednisolone (15mg/kg, maximum 1G).
- Request an ECG.
- Request an echocardiogram.
- Request a CXR – post recruitment manoeuvre.

Time completed..... Signed..... Name..... GMC.....

WITHIN 4 HOURS OF CONSENT/AUTHORISATION

- ECG report complete.
- Echocardiogram report complete.
- CXR report complete.
- Site cardiac output monitoring, if able.

Time completed..... Signed..... Name..... GMC.....

DRUGS

- Vasopressin 20 units in 50mls 5% dextrose; rate 1.2 to 10mls/hour.
- DDAVP 1 TO 4mcg IV.
- Methylprednisolone 15mg/kg (max 1G).

CONTINUOUSLY

- Ensure ongoing lung protective strategy.
- Nurse 30-45 degrees head up.
- Continue physiotherapy including suctioning.
- Review intravascular fluid status and correct hypovolaemia.
- Wean noradrenaline as able.
- Treat DI with DDAVP.
- Continue NG feed, as directed by SNOD.
- Monitor blood glucose and treat as per unit protocol.
- Monitor serum sodium concentration.
- Continue use of mechanical thromboprophylaxis.
- Ensure prophylactic low molecular weight heparin use.
- Continue hourly observations.
- Maintain normothermia.
- Stop all unnecessary medications.
- If not already present, insert a central line (right sided IJ or SC is preferable).
- Other tests or therapies may be indicated. SNOD to direct.

GOALS

PaO2 ≥ 10 kPa	U.O. 0.5 – 2 mls/kg/hr
PaCO2 5 – 6.5 kPa	Na < 150 mmol/L
pH >7.25	Glucose 4 – 10 mmol/L
MAP 60-80 mmHg	Temp 36 – 37.5 °C

NHS Blood and Transplant

Donation after Diagnosis of Death using Neurological Criteria (NC)

Donor Optimisation Care Bundle

Name.....
DOB.....
MRN.....

Patient Name ..... DOB ..... MRN ..... Weight ..... Height .....

	Start	+1hr	+2hr	+4hr	+6hr	+8hr	+10hr	+12hr	+14hr	+16hr	+18hr
PaO2 ≥ 10 kPa (FiO2 < 0.4 as able)											
PaCO2 5 – 6.5 kPa (or higher as long as pH >7.25)											
MAP 60 – 80 mmHg											
Cardiac index > 2.1 l/min/m² (if applicable)											
Urine output 0.5 – 2 mls/kg/hr											
Temperature 36 – 37.5 °C											
Blood glucose 4 – 10 mmol/L											
Signature											
Surname											
Date											
Time											

PLEASE RECORD ACTUAL VALUES

Workshop: DCD 1: Explaining and approaching (45 minutes)

Scenario Outline:
Explaining a plan to withdraw life sustaining treatment and approaching for organ donation - communications.

DCD 1: Explaining and approaching
DCD 2: Withdrawal and Lung DCD

Patient outline:

MICHAEL BARR
Key moments

1. Faculty will show a 2-minute video vignette regarding Michael, a man in his fifties, who has suffered an ischaemic stroke. Thrombolysis was unsuccessful and no neurosurgical intervention was attempted. Three days later his prognosis is accepted by the MDT as 'un-survivable' therefore withdrawal of life-sustaining treatment is planned. He does not meet neurological criteria for death as he is making spontaneous respiratory effort.
2. Participant (B) will discuss with Michael's relatives that withdrawal of life sustaining treatment. When the family appear to understand, and accept this, then organ donation may be discussed under deemed legislation.
3. A planning opportunity should occur witnessed by the other delegates.

Scenario set up:

Personnel

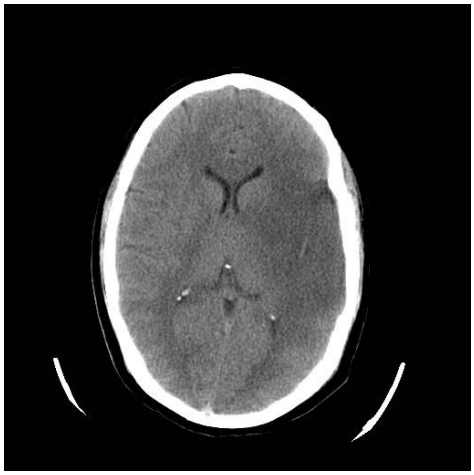
1 Faculty
1PDS faculty
1 Doctor (participant)
1 ICU Nurse
1 Specialist Nurse
2 Actors =7+ 2 other delegates =9 minimum

Facilities

- Quiet Room
- Chairs for: 2 actors, 1 doctor, 1 ICU nurse, 1 Specialist Nurse, chairs arranged facing each other or in small circle.
- Chairs behind doctor (so not in doctor's view) for: 2 faculty, 2 additional participants, 1-2 observers
- Video recording of discussion if suitable and available
- Laptop / iPad/ monitor to play the introductory video vignette.
- Actor Brief
- Debrief forms See Appendix A
- Planning tool
- Legislation guidance for all UK territories

Scenario Set Up:
Michael Barr

The video vignette will be of Michael a man in his fifties who was observed collapsing in the supermarket. He was brought by ambulance to the Emergency Department where he was rapidly intubated.



CT scan revealed a large left MCA territory infarct. His GCS was 3/15 with sluggish pupils. Discussion with neurosurgery was that because this GCS was 3/15, they would not consider decompression. Thrombolysis was advised which he received in the Emergency Department.

Three days later, on the intensive care unit he has failed to recover and has deteriorated further. His pupils are now fixed and dilated but he has a cough and makes the odd spontaneous breath. After further discussion with neurosurgery, it is decided to speak to Michael's family about withdrawing life sustaining treatment. It is not felt that he will progress to neurological death.
Scenario for

The doctor, Participant **(B),** the ICU nurse (who is caring for this patient) and the Specialist Nurse for this hospital are meeting the family for the first time.

The family know that he has deteriorated, and the outcome is likely to be poor.

The Specialist Nurse has checked, and Michael is **not** on the Organ Donor Register. The family have not raised the topic of organ donation and the actors have been told not to raise it until raised by either the doctor or Specialist Nurse He potentially fits a deemed scenario. Only his age and residency are known. A conversation with the family or a duty to enquire will enable the specialist nurse to establish if deemed conditions apply.

The doctor's role is to explain to Michael's relatives the intensive care plan is to withdraw life sustaining treatment. If the family understand and accept this plan (which they will do so in this simulation) the doctor should work collaboratively with the specialist nurse to discuss end of life decisions and organ donation.

If the conversation is planned to be decoupled, this can be done, ('timed out') and the family conversation recommenced as if time has passed.

Faculty Debriefing: (approx. 20 mins) **See Appendix A**

Using the Debriefing with Good Judgement Model use the actors and participants to contribute to the feedback.
Communication style feedback

Accuracy – were the facts correct (mindful that simulation requires some flexibility)
Brevity – was time allowed for family to speak, did the doctor waffle (danger of becoming inaccurate)
Clarity – was the doctor clear and used unambiguous language.

Delivery – was the bad news delivered with care and empathy? Were appropriate introductions made?
Empathy – Was an empathetic discussion made and expression of sorrow for the family?

Essential Topics to discuss.

The doctor should have:
Essentials

1. Ensured the family understood and accepted the withdrawal.
2. Explained the planned mechanism of the withdrawal.
3. Explained the uncertainty of death inherent in any withdrawal.
4. Transitioned to organ donation and approached the family with the specialist nurse OR
5. Involved the Specialist Nurse to approach for organ donation as per planning.
6. In the case of Scottish delegates made the duty to enquire

Other

- Planned with the multidisciplinary team.
- Introduced themselves, the bedside nurse, and the Specialist Nurse to the family.
- In asking a family to state what they know so far can sometimes be counterproductive if the family feel they have said this repeatedly and it appears to them that this is something doctors do because of rote training rather than to improve communication. Alternatively, the doctor can 'recap' and check understanding to show their knowledge of the patient and situation.
- Explained to the relatives the intensive care reasoning to advise withdrawal of life sustaining treatment being in the patient's overall benefit (GMC use overall benefit not best interests or benefit to make UK wide applicable)
- Tried to ascertain information from the family regarding the patient and their values, wishes, beliefs and any decisions – this is a legal requirement Under the MCA. Family may recount earlier conversations eg Michael wouldn't wish to survive if he was going to be disabled or he wouldn't want to suffer.

Potential additional topics to discuss.

- Language: The word 'death' should be mentioned.
- Role of the Specialist Nurse in establishing the necessary legal obligations to ensure an appropriate deemed consent/ authorisation in suitable adults or explored the child's perspective.
- Timing of the transition to organ donation once understanding of imminent death by family is clear.
- Role of knowledge of ODR at this point
- Likely time frames and how that can be used positively for families own needs.
- Communication that death is inevitable can be difficult when there is prognostic uncertainty (and there often can be) as not all who are withdrawn on die. The uncertainties can and should be acknowledged: uncertainty of outcome in time to death, if death will even follow vs left permanently and severely brain damaged, and risk of non-proceeding Donation after Circulatory Death. The withdrawal justification is often best explained as a removing a treatment that offers no benefit, and that DCD is an option if death does occur within three hours following withdrawal, not that it will.
- Decision making/managing expectations. The balance between accommodating exhausted relatives needing to go home for rest and raising donation at the 'appropriate time' (so that the process could commence), if they leave and then return expecting immediate withdrawal and death, a donation potential can be lost even if family are positive about donation.

Actor Brief

MICHAEL BARR

You are the relatives of Michael Barr, who is in his fifties. Your age and sex will determine what relationship you will have on the day. E.g., wife or partner, brother or sibling. You can imagine other family member e.g., younger children, as you wish.

Michael was observed collapsing in your local supermarket and a neighbour rang you.

You first saw him in the Emergency Department. He had a head wound from when he fell but you have since learnt that this was not the worst injury.

No one knows why it occurred, but Michael has had a stroke. This has damaged his brain.

For the last three days you have been with Michael on the intensive care unit. It has been a roller-coaster of emotions from hope to despair and back again. He has not yet woken up. Overnight you know he has deteriorated further and has become less responsive when the nurse shines a light in his eyes.

The doctors and nurses are coming to talk to you. You fear the worst. You know in your heart he is not going to survive, and he has told you previously he would not wish to live if he was going to be terribly disabled.

Don't talk about organ donation until raised by participants. When they do raise it, we want you to react neutrally at first then positively to the suggestion of organ donation, as helping others is the kind of person Michael is.He may have watched a documentary about organ donation and said it was something he would do. You don't know if he is on the organ donor register and you are unaware that the law has changed.

Don't be angry, the vast majority of families are not.
Some participants may wish to break off the conversation and have it in two sections. If this occurs the conversation will be recommenced as if time has passed.

Questions you might ask:

"What happens now?" (After you have been told he is going to die)"Why did this happen?"

'Isn't this our decision if he hasn't made one on the organ donation register?'

"Do you just turn the machines off?"

"Can I be with him when he dies?"

"How long will it take?"

"Which organs can be donated?"

Workshop: DCD 2: Withdrawal and Lung DCD **(45 minutes)**

Scenario Outline:

Withdrawal of life-sustaining treatment, diagnosing death using circulatory criteria, reintubation, and reinflation of lungs for lung DCD – simulation/ tutorial

DCD 1: Explaining and approaching.
DCD 2: Withdrawal and Lung DCD

MICHAEL BARR
Key moments

This workshop continues from DCD 1. In DCD 1 the group would have explained and gained the acceptance from Michaels family, for the withdrawal of life sustaining treatment and approached the family consent/authorisation for organ donation to proceed, including lungs.

1. In this workshop the group will have to, in **REAL TIME:**
    a. Plan the withdrawal which must include extubation and should involve the whole group.
    b. Participant (A) (with Participant (C) assisting) will withdraw of life sustaining treatment – turn off noradrenaline and extubate (no family present but same Specialist Nurse who was present in DCD 1). The Specialist Nurse will be taking observations and co-ordinating with the retrieval team.
    c. Sim mannequin 'Michael' will progress to asystole, mechanical first then electrical (with a short restoration of output) Attention should be paid to the BP range to accurately show true asystole.
    d. Participant(A) will have to confirm death after five minutes of observed cardio respiratory arrest and record this.
    e. Participant (A) and (C), ICU Nurse and Specialist Nurse will have to 'move' 'Michael' into theatre.
    f. Participant (B)will have to reintubate, then re-inflate at 10 minutes or greater (Specialist Nurse will co-ordinate times) and follow the NHSBT Checklist for Lung Optimisation in Theatre.
2. Debriefing can be made either at the end (15 minutes) OR contemporaneously within the simulation, similar to the 'testing' station . Most faculty tend to work with the latter because this is largely an unfamiliar practice for most delegates.

Scenario set up:

There are 6 principled elements to this scenario to walk through.

- **Planning with the multidisciplinary team, the withdrawal of life sustaining treatment and the ongoing care into theatre in preparation for DCD lung donation** -considering carefully the plans to be put in place and the rationale behind each of the decisions made. .It is important to highlight how this is usually undertaken, co-ordinated by SNs involving retrieval team, host theatre team including anaesthetist support as simulated in this station
  .
- **Withdrawal of treatment and use of effective, sensitive palliation measures in the context of donation.**
- **Accuracy and clarity in the diagnosis of the circulatory death in organ donation**
- **Accurate and timely recording of the death**
- **Securing the patient's airway for lung donation by reintubation**
- **Delivery of a safe, single recruitment manoeuvre at 10 mins from established asystole.**

Personnel

1 High fidelity simulation manniquin
1 Sim tech operator
1 Faculty
3 participant doctors
Participant (A) to lead the withdrawal.
Participant (C) to assist Participant (A) as second doctor.
Participant (B) to act as theatre anaesthetist.
1 ICU Nurse
1 Specialist Nurse
4 ODP students/ others (where available) to act as the retrieval team.
(There is a separate brief for them)

Facilities and Equipment See set up guide Appendix D

- **Withdrawal space**: Room set up like 'ICU' / 'recovery' bed/ anaesthetic room part of theatre/, Sim patient intubated and ventilated, with CVC and arterial lines, noradrenaline infusion, morphine at 2 mls /hr and midazolam at 5 mls/hr. High Fidelity Mannequin looking like an ITU patient with lines and tubing as would be ordinarily expected (with bandaged head as per scenario)
- **Theatre area**: A theatre-like room or space with theatre equipment and theatre lights plus reintubation equipment, anaesthetic machine to allow single recruitment breath and CPAP maintenance.
- Chairs for 1-2 observers (optional)
- Video recording of workshop (optional)

- Pink Box' containing: Paperwork – ICU, lung DCD theatre checklist, Specialist Nurse paperwork completed consent/authorisation form, charts and patient notes.
- NHSBT INF 1425/3 document

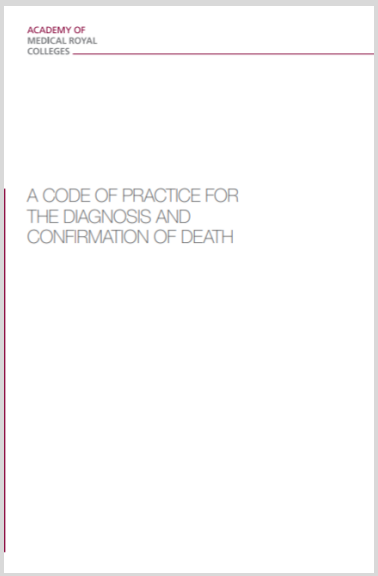
- Simulation mannequin capable of mimicking withdrawal of life sustaining treatment and progression first to mechanical asystole then electrical asystole, with short return of cardiac output of approximately 10 seconds, 15-20 seconds after first loss of output.
- Bed or trolley for the mannequin
- Ventilator (can be a transport ventilator) and tubing
- Oxygen supply (for vent and anesthetics machine)
- Drip stand with volumetric pumps and fluid infusion to the mannequin
- 3X infusion pumps (noradrenaline low dose infusion, morphine 2mls/hr and midazolam 5mls/hr)
- 'C' circuit for 'anaesthetic room'/ withdrawal room
- Yankuer sucker and suction
- Bladder syringe and kidney dish (NG aspirate)
- Syringe
- Gauze
- Pen torch
- Stethoscope
- Scripted deterioration for SIM techs

In Theatre

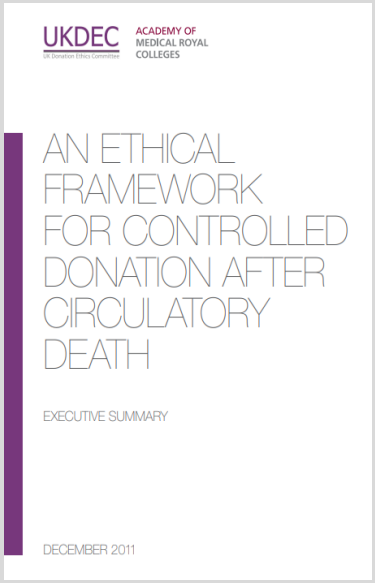
- Reintubation tray/ trolley

  Laryngoscope (+ video laryngoscopes if possible)
  Endo tracheal tube (ETT) to replace the one removed.
  ETT tapes or securing device.
  C circuit/rebreathe bag
  Yankuer sucker and suction
  Bougie
  Suction catheters
  Tongue depressor
  Syringe
  gauze

- Anaesthetics machine
- Theatre space with draped trollies, drip stands and equipment to mimic 'retrieval ready' theatre.
- Gowns, theatre hats and gloves for theatre support plants

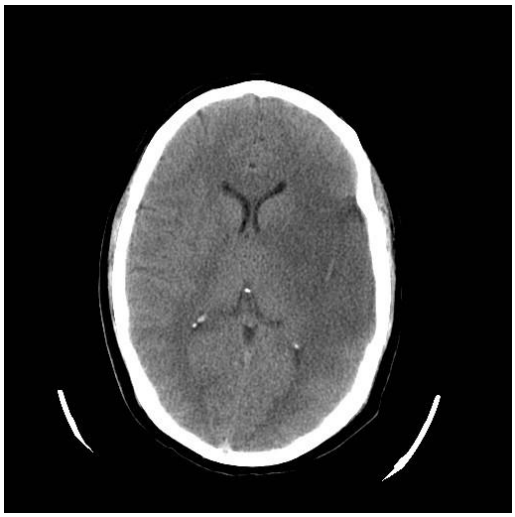


Link HERE



Link HERE

Faculty Brief



Michael a man in his fifties who collapsed in supermarket. He was intubated in the Emergency Department, with GCS 3/15, sluggish pupils and CT scan revealed a large left MCA territory infarct. He had no neurosurgery but received thrombolysis.

Three days later, on the intensive care, he deteriorated further. His pupils became fixed and dilated but he was coughing and breathing a few spontaneous breaths. Medical consensus was to withdraw life sustaining treatment.

In DCD 1 the group spoke to Michael's family and ensured their understanding and acceptance of this plan. Donation was discussed. Michael was not on the organ donor register.
His family have supported the deemed consent to donation. The plan is to retrieve his kidneys, liver, pancreas, and **LUNGS.**

It is 12 hours later, and a full joint handover has occurred led by the specialist nurse with both retrieval teams and the clinicians (the participants) and the surgical retrieval teams are ready in theatre. It is time to withdraw life sustaining treatment.

Michael's family are not with him for the withdrawal (unless simulation actors are free). They have said their goodbyes. It is assumed that the anaesthetic room is the chosen area for withdrawal in this instance to reinforce good practice. As confidence around withdrawal in the anaesthetic room is growing, it is increasingly common. It enables a dignified transfer for the patient, privacy and quietness for patient and family during palliation. It is necessary for DCD heart and reduces risk of ischaemic cholangiopathy in liver donation.

Learning Objectives

1. Demonstrate how to safely confirm death after cardiorespiratory arrest using the AoMRC (2025) A Code of Practice for the diagnosis and confirmation of death 2025 Update.
2. Demonstrate how to withdraw life-sustaining treatment in a manner consistent with any national guidance.
3. Demonstrate what special requirements are required for DCD – proximity to theatre & potential impact on organ quality with lengthy transfers, preparation for bed moving, co-ordination role of the Specialist Nurse and need for prompt declaration of death.
4. Understanding of the special requirements and additional safety recommendations for Lung DCD, re-intubation at any time and reinflation lungs at 10 minutes.

At set up:

- Explore participant's exposure to diagnosing death in DCD donation and experience in DCD Lung donation (DCD lungs is currently very rare)
- Highlight the role of the SN in co-ordinating the donation, ensuring a full handover and planning and co-ordinating the discussion between retrieval teams and the facilitator for DCD lung reintubation.

- In all DCD donor cases, awareness of plans for ANRP/NRP or DCD heart is important in supporting an effective donation. Preparation of each of these involves specific planning and preparation for potential blood transfusion and for the equipment use. Clarity enables effective planning for all and supports visiting SNs less familiar with the host hospital.
- Briefly discuss/outline moment of honour - a respectful pause, taking place either before or after the retrieval operation. This moment brings together those who have cared for the donor and is a time of reflection and appreciation of the selfless act of kindness and generosity from the donor and their family. This is usually instigated and co-ordinated by the SN. https://www.odt.nhs.uk/deceased-donation/best-practice-guidance/end-of-life-care/#:~:text=The%20Moment%20of%20Honour%20is,the%20donor%20and%20their%20family.
- Direct the 3 delegates to plan the withdrawal of treatments and ongoing care prior to lung retrieval, talking through their rationale for each element identified.

In **REAL TIME** (20-25 minutes) the group must:
Plan with the multidisciplinary team the withdrawal of life sustaining treatment and the ongoing care into theatre

1. Participant (A) will lead and demonstrate planning the withdrawal, which must include extubation and should involve the whole group identifying roles and responsibilities. Reintubation can occur in the anaesthetic room OR once moved into theatre but the rationale for the choice must be explored. ECG is advised to be continued as can often help predict pending asystole but balanced with family focus on these indicators. Discuss difficult intubations: consider grading, access to difficult intubation trolley/equipment, family expectations of extubation and natural appearance plus in extreme circumstances possibly considering keeping the ETT to support donation but this should be avoided wherever possible.

Reintubation	Anaesthetic Room	Theatre
Advantage	Enables rapid reintubation after death	Enables patient to move away from the grieving family reducing risk of family distress by witnessing an intubation procedure
	Allows clarity of preparation kit in one place with the practitioner awaiting to use it	Keeps the area for palliation as non-clinical as possible
	Airway can be secured prior to any risk of airway soiling through movement	Supports no delay in surgical start.
Disadvantage	Family needs may conflict with prompt reintubation	Risks airway soiling with patient movement prior to securing the airway
	Rapid reintubation risks an adverse early rescue breath	Equipment in theatre at risk of being moved or altered whilst not attended to.
	Equipment in the area where palliation occurs risks the area appearing too clinical.	Risks a delay in airway being secured by competing demands at the start of retrieval

2. Participant (A) (with Participant (C) assisting) will withdraw life sustaining treatment – turn off noradrenaline and extubate (no family present but same Specialist Nurse who was present in DCD 1.) Specialist Nurse will take observations and liaise with the

retrieval team in theatre every minute (more frequent than usual but to illustrate usual practice during the process of death.

3. Discuss palliation measures and impact on timeliness of death. Continuous infusions Vs bolus. Discuss opioid use potentially delaying asystole because of decreased oxygen requirements and balance of this with symptom management, any family distress and patient/family desire to support an effective donation.

4. Simulation mannequin will progress to asystole (within 3 mins), mechanical first than electrical, with a short return of cardiac output. The first progression to mechanical asystole is sped up to allow for the full scenario to be played out. (ATTENTION TO BP RANGE SETTINGS must be made to make asystole clear).

5. Participants must recognise the return of output, 'stop the clock' and wait for asystole to be re-established before restarting the clock and monitoring for a full 5 mins. Participants should show respectful collaborative working with the SN during this time.

6. Participant (A) will have to confirm death after five minutes from established mechanical asystole. Pay attention to all elements required to fulfil the diagnosis.

Current recommendation – it is the observation for five minutes that is important. There is no requirement by the AoMRC to listen to the heart with a stethoscope for the full five minutes.

Step 1: Start the clock on mechanical asystole (arterial line) not electrical.
Step 2: Observe ongoing apnoea and mechanical asystole (arterial line) for five minutes.
Step 3: At five minutes brief auscultation to confirm accuracy of arterial line (if not done within the five minutes, which is also acceptable) then complete neurological examination.

From the pre and post course survey with answers
In diagnosing death after cardio-respiratory arrest an observation period of five minutes is required to ensure the brainstem is irreversibly damaged? (True / False) It is to establish that no auto-return of a cardiac output occurs.

In diagnosing death after cardio-respiratory arrest the corneal reflex is part of the required examination? (True / False) In several audits corneal reflex is often a missed element of diagnosis and verification of death

7. The doctor making the diagnosis of death must then record this immediately. This highlights the risks associated with delayed recording should the practitioner be interrupted. Prompt recording is essential in donation. This record ideally should be shown to the lead surgeon in theatre to verify the patient is dead and donation can proceed. Discuss practicalities where electronic notes are used.

8. Intubation can occur in the anaesthetic room OR in theatre

9. Participant (B) will reintubate, if not already, re-inflation of the lungs can only be made **at 10 minutes or greater, from final asystole** (Specialist Nurse co-ordinates times) following the NHSBT lung DCD theatre checklist. The choices made need to be highlighted and risks/ benefits of both explored (see above). Where reintubation in theatre is chosen the 'theatre staff' will create noise and actions to make a realistic challenge to participants.

10. Participant (A) and (C) with the ICU Nurse and Specialist Nurse will have to 'move' the patient into theatre (which may be out of the door and back in depending on the sim centre) The scenario works best when there is a realistic theatre space, equipment and

OPD /theatre volunteers or faculty to create a small retrieval team who can create noise urgency and a realistic theatre experience.

11. The simulation ends once the single inflation breath is given, PEEP established or the ETT clamped.

Faculty Debriefing (approx. 20 mins) if contemporaneous debriefing is not chosen. The debriefing form is available for reference and may guide your approach to the debrief **See Appendix A,** Please remember to use 'debriefing with good judgement' principles, exploring decisions made by trainees in an enquiring, neutral non-judgemental way and encourage self-reflection rather than offering passive advice.

Essential Topics to discuss

- Importance of planning with specialist nurse and retrieval team ahead of the WoLST
- Importance of planning the palliation that will allow a death that will support the patient decision to be a donor.
- How the introduction of morphine/diamorphine can prolong the mechanism of death.
- Importance of planning the logistics of movement of the donor into theatre.
- Importance of choosing where to intubate.
- Alternative locations for withdrawal pros/ cons
    - ICU -distance from theatre can compromise organ quality particularly for the liver if warm ischaemic time prior to retrieval is extended by the distance to be travelled.
    - Recovery and anaesthetic room- whilst this is now the preferred place to withdraw to reduce warm ischaemic time, it can provide logistic difficulties. This can be overcome by sensitive negotiation with theatre staff and establishing a clear, well thought through, recognised, recorded and shared plan.
    - ED – withdrawal in ED is now highly unusual and never now advised in terms of dignity for patients or ability to facilitate donation. ICU admission is preferred.
    - Link these to transplant outcomes as above.

- **When to start the clock**
    - At onset of mechanical asystole in expectation that electrical asystole or agonal rhythm will be present at five minutes.
    - What to do if mechanical output returns (await until asystole is re-established and a full 5 mins is witnessed followed by full diagnosis and verification)
- Role of the Specialist Nurse in this process (let Specialist Nurse explain this part)
- The mechanism of withdrawal of life sustaining treatment on ICU influencing the timing of death and national guidance (which there is very little currently)
- Criteria and paperwork for confirming death using circulatory criteria.
    1. A clear intention not to attempt cardiopulmonary resuscitation (CPR) that could restore circulatory, and therefore cerebral, function.
    2. An examination and an observation period to confirm continuous apnoea, absent circulation, and unconsciousness; after which the likelihood of spontaneous resumption of cardiac function will have passed.

Diagnosing and confirming death after cardiorespiratory arrest (Circulatory Criteria)	Diagnosis and confirmation of death in a patient in coma (Neurological Criteria)
Demonstration of loss of the capacity for consciousness	
Absence of the pupillary response to light	Absence of the pupillary response to light
Absence of the corneal reflex	Absence of the corneal reflex
Absence of any motor response to supra-orbital pressure	Absence of any motor response to supra-orbital pressure
Demonstration of loss of the capacity to breathe	
Five minutes observation of maintained cardiorespiratory arrest	Five minutes apnoea test to demonstrate no spontaneous respiratory effort

3.
(a) Five minutes is related to spontaneous resumption risk
(b) Examination is like a mini neurological death test including five minutes apnoea

4. The prohibition at any time of any intervention that might restore cerebral blood flow by any means.

How these criteria relate to Lung DCD

- Successful lung DCD requires:

    1. Confirmation of death, that is accurate and timely.
    2. Safe transfer of the patient to the operating theatre.
    3. Protection of the airway to prevent aspiration of stomach contents.
    4. Early single inflation of the lungs with oxygen (no earlier than 10mins from asystole) followed by either CPAP support or ETT clamping.
    5. Ongoing support of the thoracic retrieval team.

- Pulmonary resuscitation (i.e. mechanical ventilation or hand bagging) as a risk

    - The P in CPR
    - Changes in thoracic pressure may equal the C in CPR
    - The Australian and UK cases
    - BTS/ICS 2010 Consensus Statement
    - Reintubation any time by anyone competent including ICU doctor
    - Single recruitment inflation and onto CPAP at <u>10 minutes from asystole</u>
    - Paperwork – theatre checklist for lung DCD

Potential additional topics to discuss.

- Extubation and its role in end-of-life care on ICU Vs weaning plans.
- Sedation and analgesics and their role in end-of-life care on ICU and in donation cases
- Place of re-intubation -in theatre after a move or immediately after diagnosis of death prior to movement pro/cons of each
- NSHBT and MOHAN foundation **DCD** app for Apple and android phones offers support

Additional Information (from a draft Lung DCD paper, Dr Dale Gardiner)
Safe Lung DCD

Successful lung DCD requires:

1. Correct confirmation of death
2. Transfer of the patient to the operating theatre
3. Protection of the airway to prevent aspiration of stomach contents
4. Timely inflation of the lungs with oxygen
5. Ongoing support of the thoracic retrieval team

Confirmation of death

The confirmation of death in lung DCD follows the AoOR2C 2008 guidance for diagnosing death after cardio-respiratory arrest (circulatory criteria). Essential components for diagnosing death using circulatory criteria include a decision that further resuscitation will not be continued or commenced; an observation period (five minutes) combined with a clinical examination, to confirm continuous apnoea, absent circulation, and unconsciousness, after which the likelihood of spontaneous resumption of cardiac function will have passed; and a prohibition against activities that might restore the cerebral circulation after death has been confirmed. (ref my article BJA and AoOR2C).

When the diagnosis of death is made in the nearby intensive care, either an intensive care doctor or a suitably trained ACCP can make this diagnosis (where the established FICM ACCP training programme has been completed). An anaesthetist might provide this service in environments outside the ICU, such as in the theatre complex or in the Emergency Department.

Transfer of the patient to the operating theatre

Rapid transfer of the deceased donor to the operating theatre is required to minimise warm ischemic time. Where the ICU is some distance from the theatre complex, this may compromise organ quality and the withdrawal of life-sustaining treatment is preferred to be undertaken in the recovery room, or other co-located locations.

Following the withdrawal of life-sustaining treatment, the time to the confirmation of death in DCD, is unpredictable and additionally death will proceed within a time frame to allow DCD, in only 50% of cases. This presents a significant challenge to the donating hospital, to hold an anaesthetist and theatre in readiness, and this must be planned for, prior to withdrawal.

Protection of the airway to prevent aspiration of stomach contents

International evidence on withdrawal of life sustaining practices in intensive care suggests prevalence for extubation of only 9-18% but for DCD the prevalence appears much higher 69-100%. UK withdrawal practices are unclear. The only UK study from the above DCD references is Suntharalingam (7), a prospective observational study of 191 DCD patients from nine UK centres, in which 79% of patients were extubated. UK data supplied by NHSBT from the Potential Donor Audit (October 2009 – July 2012), for *all possible DCD donors for whom treatment was withdrawn*, suggests an extubation rate of 47% and a trend to increasing frequency over time (44% October 2009 - 50% July 2012).

Assuming that extubation has occurred, it is necessary in lung DCD to protect from aspiration, which is at heighted risk if there is likely to be movements of the deceased onto an operating theatre table and if abdominal organ donation is also planned. There is no clear consensus as to whether re-intubation should be performed by the clinician who confirmed death, a theatre anaesthetist from the donor hospital or by a member of the organ retrieval team. Often this duty is most easily carried out by a theatre anaesthetist, offering their skills

and assistance and acting as members of the organ retrieval team, in the same way anaesthetists from the donor hospital care for the deceased in DBD. Whichever the case, it remains essential to identify who is responsible for reintubation, prior to withdrawal and this would ideally be built into local policies.

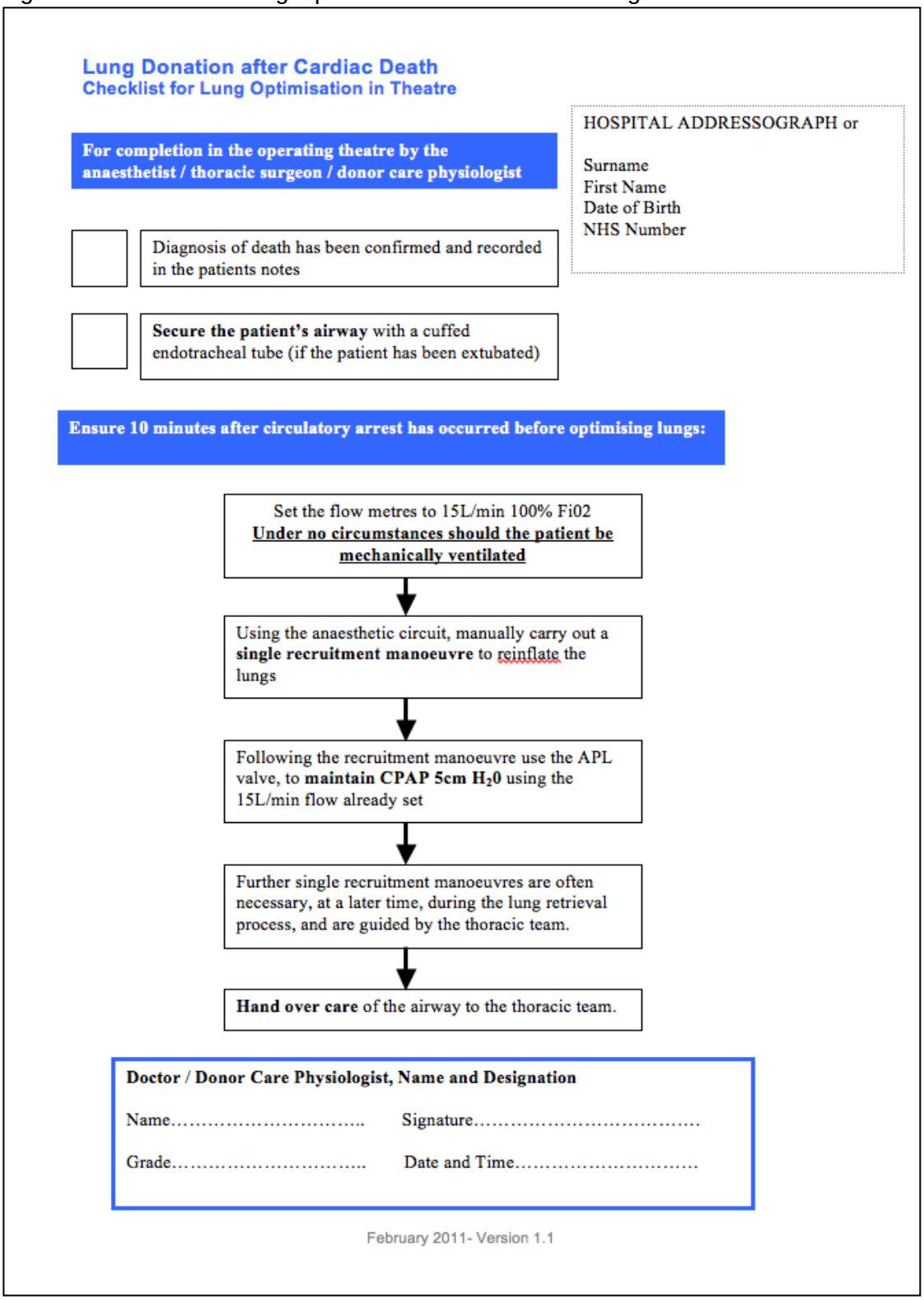
Reintubation is complicated in lung DCD. Firstly, because it is advised not to re-inflate the lungs at the time of intubation (see below), and secondly, even if the lungs were inflated, without a circulation there would be no end tidal pCO_2, the usual gold standard for judging successful intubation. Therefore, direct visualisation of endotracheal tube passage is likely the intubating clinicians best measure of success. This suggests that it is important the intubating clinician has an appropriate level of expertise and if there is an expectation for a difficult reintubation, to perhaps reconsider the chosen method for treatment withdrawal.

Early inflation of the lungs with oxygen

Successful lung DCD requires oxygenation, delivered by the addition of positive pressure, to reduce warm ischaemic damage. The Academy of Medical Royal Colleges criteria for the diagnosis of death following cardio-respiratory arrest (circulatory criteria) requires that cardiopulmonary resuscitation is not continued or commenced. The addition of positive pressure, especially if provided cyclically and with a physiologic tidal volume, is by definition pulmonary resuscitation, and potentially cardiac resuscitative, secondary to the changes in intra-thoracic pressure. Any restoration of the cerebral circulation would invalidate the confirmation of death. [Bernat CCM 2010] One case report from Australia, of restoration of the circulation during lung DCD, was presented at the 4th International Meeting on Non-Heart Beating Organ Donation (2008). In this case report restoration of the circulation was attributed to 'over-enthusiastic hand ventilation by the anaesthetist'. [Gardiner D (2008) "Report on the 4th International Meeting on Transplantation from Non-Heart Beating Donors: London 15-16 May 2008" JICS 9(2): 206.] Following this case, Australian guidance (2010) allows only post mortem reintubation and insufflation with 100% oxygen but not cardiac compression's or mechanical ventilation.
http://www.donatelife.gov.au/Media/docs/DCD%20protocol%20020311-0e4e2c3d-2ef5-4dff-b7ef-af63d0bf6a8a-1.PDF

A UK multi-party consensus statement for DCD, which included the Intensive Care Society and the British Transplantation Society, recommended that reinstitution of cyclical mechanical ventilation of the lungs should not be started before exclusion of the cerebral circulation. However, there was agreement that re-inflation of the lungs can be safely achieved 10 minutes after circulatory arrest, using the application of a "recruitment" manoeuvre that does not involve cyclical ventilation. For example by applying a high level of CPAP (such as 40 cmH2O) for 45 seconds followed by maintenance of 5 cmH2O CPAP. [ref ICS BTS Guidance] This protocol has been successfully implemented in our institutions and has been incorporated as a Theatre Checklist into the Midlands Integrated Care Pathway for Deceased Donation, for use by anaesthetic staff, usually at sub-consultant grade. [see Figure 1].

Figure 1 Checklist for Lung Optimisation in Theatre for Lung DCD



Lung Donation after Cardiac Death
Checklist for Lung Optimisation in Theatre

HOSPITAL ADDRESSOGRAPH or

Surname
First Name
Date of Birth
NHS Number

For completion in the operating theatre by the anaesthetist / thoracic surgeon / donor care physiologist

- ☐ Diagnosis of death has been confirmed and recorded in the patients notes
- ☐ **Secure the patient's airway** with a cuffed endotracheal tube (if the patient has been extubated)

Ensure 10 minutes after circulatory arrest has occurred before optimising lungs:

Set the flow metres to 15L/min 100% Fi02
Under no circumstances should the patient be mechanically ventilated

↓

Using the anaesthetic circuit, manually carry out a **single recruitment manoeuvre** to reinflate the lungs

↓

Following the recruitment manoeuvre use the APL valve, to **maintain CPAP 5cm H_20** using the 15L/min flow already set

↓

Further single recruitment manoeuvres are often necessary, at a later time, during the lung retrieval process, and are guided by the thoracic team.

↓

Hand over care of the airway to the thoracic team.

Doctor / Donor Care Physiologist, Name and Designation

Name…….. Signature……

Grade…….. Date and Time……

February 2011- Version 1.1

Ongoing support of the thoracic retrieval team
Following reintubation and reinflation of the lungs, it is usually possible for the thoracic retrieval team to stand back and allow abdominal organ retrieval to continue. This is testament to the lung's resistance to warm ischaemia and the benefit of the above listed interventions by the anaesthetist. When surgical lung retrieval commences there will be a requirement to cold perfuse the lungs, and this will necessitate gentle ventilations to distribute the perfusate evenly through the lungs. At this point a significantly further time period will have passed since circulatory arrest and it is possible for thoracic surgeons to isolate the cerebral circulation, for example by use of a cross clamp across the arch of the aorta, if there is any concern of a potential to restore cerebral circulation.

NHSBT now use the following INF 1425/3 document to support this (Available from the SNs nationwide and in the WLST station pink box): see below

INF1425/3 – Care of Potential Lung DCD Donors – Safety Brief

NHS Blood and Transplant
Copy No:
Effective date: 13/01/2021

For completion in the operating theatre by the anaesthetist/thoracic surgeon/donor care physiologist.

HOSPITAL ADDRESSOGRAPH or

Surname.....
First Name .....
Date of Birth .....
Hospital Identifier/
ODT Donor Number .....

Safety Checklist for Lung Donation after Circulatory Death

Date and Time of onset of circulatory arrest.....

Date and Time of confirmation of death.....

Diagnosis of circulatory death has been confirmed and recorded in the patients notes (initial box if yes). ☐

Secure the patient's airway with a cuffed endotracheal tube, (can be done at any time after certification of death)

Do NOT inflate lungs at this stage. **Intubation date and time** .....

Ensure TEN MINUTES from circulatory arrest has occurred before optimising |(re-inflating) the lungs.

Set the flow-metre to 15L/min of oxygen enriched air, or FiO_2 0.5

↓

Using the anaesthetic circuit, manually carry out a **single recruitment manoeuvre** to re-inflate the lungs – *suggested manoeuvre: maintain 30cm H_2O for 30 seconds using APL valve.*

Re-inflation date and time
.....
Allow a minimum of TEN MINUTES since time of onset of circulatory arrest (confirm who will be timing this, and confirm with certifying doctor when to start timing)

↓

Set the APL valve to **CPAP 5cm H_20** and maintain flow at 15L/min.

↓

Cyclical mechanical ventilation must not be started until a minimum of 15 minutes after loss of circulation and only after the thoracic team have vented the left atrium and begun to flush the lungs

↓

Hand over care of the airway to the thoracic team.

Anaesthetist/Thoracic Surgeon/Donor Care Physiologist

Name:
.....

Signature:
.....

Grade:.....

Date and Time:
.....

Rationale for Lung Optimisation

1. Lung Donation after Circulatory Death (DCD) is vital to increasing the number of lungs available for transplantation and there is evidence to suggest that lungs from DCD donors are as successful for transplantation as those retrieved from a donor following brain stem death.
2. After circulatory arrest and following the diagnosis of death it is vital to secure the patient's airway with a cuffed endotracheal tube as aspiration during abdominal retrieval procedures will prevent lung donation. This procedure can be performed **any time** after the diagnosis of death. Some patients may already have a cuffed airway (either endotracheal tube or tracheostomy) in situ if extubation was not part of the WLST plan.
3. There is a potential risk that lung ventilation, following circulatory arrest, may restore cardiac activity and potentially cerebral circulation. However, without re-inflation and oxygenation, lung donation cannot successfully occur.

   No lung recruitment manoeuvres should be carried out within the first 10 minutes following irreversible circulatory arrest.
4. The Department of Health organised consensus meeting agreed to a single recruitment manoeuvre with oxygen-enriched air, after a minimum of 10 minutes from circulatory arrest, followed by the application of CPAP; in accordance to the method outlined on this flow chart.
5. Further recruitment manoeuvres are often necessary, at a later time, during the lung retrieval process, and are guided by the thoracic team. Under no circumstances should the patient be mechanically ventilated, until there has been satisfactory exclusion of the cerebral circulation (recommended method is cross clamp across the arch of the aorta), as there is a theoretical risk that rhythmic movements of the lungs could restore cardiac activity.

This checklist was adapted for use, referencing the Consensus Statement on Donation after Circulatory Death from the British Transplantation Society and Intensive Care Society (organised by the Department of Health (in association with the Devolved Administrations) and NHSBT); 2010.

For further information please also refer to:
National Standards for Organ Retrieval from Deceased Donors (please ask the SNOD).
https://www.aomrc.org.uk/wp-content/uploads/2016/05/Controlled_donation_circulatory_death_consultation_0111.pdf

INF1425/3 – Care of Potential Lung DCD Donors – Safety Brief

NHS
Blood and Transplant
Copy No:
Effective date: 13/01/2021

Lung retrieval from potential DCD donors can make very important contributions to lung transplantation. However, it requires careful planning and close collaboration between everyone involved in organ donation and retrieval. Recent incidents suggest that not all staff are aware of these requirements.

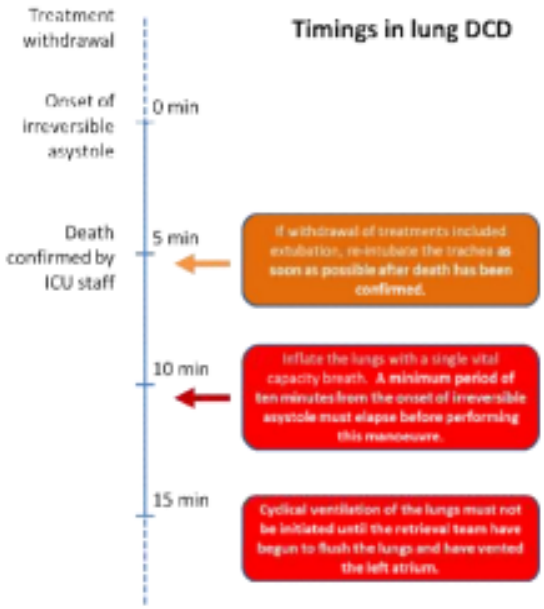
Background

Successful lung retrieval from a DCD donor fulfils more completely a person's wish to be a donor and should be pursued wherever possible. There are challenges however, including soiling of the airways with gastric contents (if the patient has been extubated as part of treatment withdrawal), warm ischaemic injury to the lung parenchyma and atelectasis. Whilst national guidance on lung DCD has laid out how to address these challenges,[1] a series of incidents reported to NHSBT suggest that this is not always well understood. The purpose of this safety briefing is to clarify this guidance and remind clinical staff that lung DCD retrieval requires careful planning and close collaboration between all of those involved in the care of the patient, including the organ retrieval team (see note 1).

Protection against airway soiling If the patient has been extubated as part of treatment withdrawal, the airway should be re-intubated as soon as possible after death has been confirmed (note 2).

Lung ischaemia The lungs should be inflated with a single vital capacity breath of oxygen-enriched air. **A minimum period of ten minutes from the onset of irreversible asystole must elapse before performing this manoeuvre** (notes 3 and 5).

Ventilation Cyclical ventilation of the lungs is not allowed **until the retrieval team have started to flush the lungs and have vented the left atrium** (notes 4 and 5).



IT IS VITAL THAT ALL STAFF STRICTLY ADHERE TO THESE RULES

[1] Organ donation after circulatory death. Report of a consensus meeting. Available at https://www.bts.org.uk/Documents/Guidelines/Active/DCD%20for%20BTS%20and%20ICS%20FINAL

1. DCD lung retrieval is a time-critical process. Before treatments are withdrawn there should be effective communication between the ICU team, the Specialist Nurse-Organ Donation and the Retrieval Lead to explicitly agree
   a. who will be the time-keeper (this will be the SN-OD)
   b. who will intubate the airway, and when
   c. who will re-inflate the lungs, and when
   d. how cyclical re-ventilation will be initiated, and when
   e. for how long a member of the anaesthetic / ICU team will be needed.

The timings of these interventions must be agreed by all parties. Any uncertainty or dispute MUST be resolved before treatment withdrawal.

2. Ensure that the cuff of the endotracheal tube is firmly inflated to prevent airway soiling.

3. Re-inflation of the lungs
   a. If performed by a member of the anaesthetic / ICU team, use an anaesthetic machine and circuit to re-inflate and recruit the lungs by delivering a single vital capacity breath of 50% oxygen to generate an airway pressure 30 – 40 cm H_2O for 30 seconds. Thereafter, maintain lung inflation by clamping the endotracheal tube or by adjusting gas flows and the APL valve to 5–10 cm H_2O CPAP.
   b. If performed by a member of the retrieval team, use a manual device such as an Ambu Bag® to re-inflate the lungs with a single breath of oxygen-enriched air, thereafter clamping the endotracheal tube to maintain lung inflation.
   This manoeuvre may need to be repeated in order to complete / maintain lung inflation.

4. Intermittent ventilation helps to distribute perfusate through the lungs. Although there is a very small risk that this may restore myocardial contractility, this is not possible once cold perfusion of the lungs has started and the left atrium has been vented.
   a. If initiated by a member of the anaesthetic / ICU team, the lungs should be ventilated with 50% oxygen via the anaesthetic machine, using pressure control ventilation if possible.
   b. If initiated by a member of the retrieval team, the lungs should be ventilated manually with oxygen-enriched air using an Ambu Bag® or similar device.

5. If the arch vessels are to be clamped, for instance to support normothermic regional perfusion, then lung re-inflation and ventilation can begin as soon as the cerebral circulation has been so isolated.

Workshop: Tutorial 1 - Ethics and Deceased Donation **(45 minutes)**

Scenario Outline:

	Workshop 1	Workshop 2	Workshop 3	Workshop 4	Workshop 5	Workshop 6	Workshop 7	Workshop 8
Tutorial **Groups**	T2 **4&5**	T1 **5&6**	T2 **1&6**	T1 **2&7**	T2 **3&8**	T1 **1&4**	T2 **2&7**	T1 **3&8**

Take delegates through a real scenario given by a delegate using the MORAL BALANCE model
Or
use a preprepared scenario found from the website Download from the Faculty Website HERE
Slide sets for both sessions are available on the Faculty Website HERE

Workshop: Tutorial 2 Pitfalls in testing **(45 minutes)**

Tutorial - Pitfalls in diagnosing and confirming death using neurological criteria

Key moments

1. Tutorial is delivered as an interactive quiz with opportunity to discuss answers after each question.
2. Each participant (including observers) will have an electronic voting system (or laminated separate Dead / Not Dead A4 sheets)
3. There are 17 questions
4. If this workshop finishes earlier the time should be used to discuss any other aspects of the course the participants wish

Scenario set up:

Personnel
1 Faculty
A single group is: 3 Doctors +/- observer
1 ICU Nurse
+/- SN

It can be seen that the groups come to this tutorial at different stages throughout the day and at different times of the DBD patient journey.

Facilities

Room set up: Tutorial room with chairs.
PowerPoint presentation 2025
Interactive electronic voting facilities Contingency will be Dead / Not Dead A4 sheets.
Flip chart and pens

The Quiz PLEASE REFER TO THE 2025 QUIZ CONTAINED WITHIN THE STATION BOX

Pitfalls in Neurological Death Testing (Dead or not Dead Quiz?)
The following statements are consistent with the neurological criteria for death.
Yes = dead
No = not dead

Example Question
During your brain stem testing investigation, the patient blinks to command.

Is a brain stem death diagnosis still possible?
(Dead)
Is a brain stem death diagnosis NOT possible?
(Not Dead)

Not brain stem dead – Patient may be locked in.

Question 1
The patient flexes their arm at the elbow following imposition of a painful stimulus to the nail bed on that side.

Is a brain stem death diagnosis still possible?
(Dead)

Is a brain stem death diagnosis NOT possible?
(Not Dead)

Dead - May represent a spinal reflex. Code of practice mentions pushing on limbs, but NDT forms talk about a central response. Potential for confusion and may explain more established colleagues testing limbs. Forms are currently under review. It is central response only we are looking for limb movement could be spinal reflex.

Question 2
The ventilator registers the patient as making spontaneous respirations.

Is a brain stem death diagnosis still possible?
(Dead)
Is a brain stem death diagnosis NOT possible?
(Not Dead)

Dead - May represent the heartbeat creating flow that is triggering sensitive ventilation flows. Caution in practice if there is new ventilators, water in tubing. Suggest a mini test on the C circuit.

Question 3
The patient has a generalised tonic clonic seizure.

Is a brain stem death diagnosis still possible?
(Dead)
Is a brain stem death diagnosis NOT possible?
(Not Dead)

NOT brain stem dead – the patient must have intact neural connections to have a grand mal fit. Suspicion of myoclonic jerks suggest expert colleague review.

Question 4
The patient's pulse increases from 70bpm to 110 bpm during apnoea testing?

Is a brain stem death diagnosis still possible?
(Dead)
Is a brain stem death diagnosis NOT possible?
(Not Dead)

Dead - Hypercarbia (which occurs during apnoea testing) results in endogenous adrenaline release.

Question 4a

The patient's pulse increases from 70bpm to 110 bpm after injection of 2mg atropine?

Is a brain stem death diagnosis still possible?
(Dead)
Is a brain stem death diagnosis NOT possible?
(Not Dead)

Not Dead - the tachycardia is vagally (cranial nerve X) mediated, but may see 3% increase secondary to limited local effects. Often used in Spain and can be used as an ancillary test where other ancillary testing is limited. Usually used for teaching as can dilate the pupils and other changes made around this time (vent settings) may also act as a stimulus (if Co2 rising endogenous adrenaline release may mediate a similar effect)

Question 5
There is slow drift of one eye away from the ear in which cold water is injected?

Is a brain stem death diagnosis still possible?
(Dead)
Is a brain stem death diagnosis NOT possible?
(Not Dead)

NOT brain stem dead – any eye movements in response to caloric testing signifies the presence of some reflex brain stem arc function. Caution as the response may also be delayed.

Question 6
The patient sits up during apnoea testing (Lazarus sign)?

Is a brain stem death diagnosis still possible?
(Dead)
Is a brain stem death diagnosis NOT possible?
(Not Dead)

Dead - A spinal reaction to the acidosis which follows hypercarbia. Very unsettling and disturbing! Worth explaining to those less aware where a non-donating patient is removed from the ventilator this could occur.

How are you going?
These six questions were asked in the Australian Joint Fellowship in Intensive Care medicine exam 2008 (and thus went through an exam board) and the pass rate was only

65%!

The following questions are less exacting and may generate more debate and discussion. That is fine and suits the education purpose of this tutorial.

Question 7
During an apnoea test on a mechanical ventilator after 20 seconds the patient starts to breathe and then continues to breathe steadily at 16 breaths per minute without variation over the next five minutes?

Is a brain stem death diagnosis still possible?
(Dead)
Is a brain stem death diagnosis NOT possible?
(Not Dead)

Dead – ventilator apnoea ventilation has kicked in.
Are you convinced not to do your apnoea tests still connected to the ventilator?

Question 8
Supra-orbital painful stimulus leads to movement in one of the arms?

Is a brain stem death diagnosis still possible?
(Dead)
Is a brain stem death diagnosis NOT possible?
(Not Dead)

Not dead – although one primarily looks for movement in the cranial nerve distribution one must actively ensure (by repetition) that this was a coincidental spinal reflex but until proven this may represent the patient is not brain stem dead. 'Cleanliness' around testing to exclude other sources of stimulus need to be considered. Flowtron activation, someone touches the bed at the tie of testing triggering an unintended stimulus and response, painful stimuli pushes the head back resulting in stimulus to the cervical spine nerve area.

Question 9
The patient is seen to shrug the shoulder when the arm is touched or when the head is rotated.

Is a brain stem death diagnosis still possible?
(Dead)
Is a brain stem death diagnosis NOT possible?
(Not Dead)

Dead – spinal roots also supply the neck muscles, and the anatomical course of motor CN N XI is complicated arising in the spinal cord traversing up the foramen magnum (outside the brain stem) and then exiting as Cn N XI to supply the neck muscles. Next slide illustrates this on video.

The next 4 questions are on the need for ancillary investigation.1.Ancillary investigation is NOT required?(Dead)2.Ancillary investigation is required?(Not Dead)

Question 10

The patient has had a therapeutic decompressive craniectomy?

1.Ancillary investigation is NOT required?
(Dead)
2.Ancillary investigation is required?
(Not Dead)

Not Dead–therapeutic decompressive craniectomy is a Red Flag and ancillary investigation (CT angiography) is advised.
Note1. The quoted sensitivity of CTA is 85% for demonstrating absent cerebral blood in DNC. Sensitivity may well prove lower in patients who have had therapeutic decompressive craniectomy.

Note 2. The diagnosis of death in the UK is by concept FUNCTIONAL-the irreversible loss of the capacity to breathe combined with the irreversible loss of the capacity for consciousness. Theoretically absent flow isn't mandated–seek expert advice.

But if Concern on Precondition / Red Flag situation if FLOW = answer is NO
Little current guidance for children work ongoing to establish some

Question 11
Due to left orbital trauma you can't visualise or observe the left eye?

1.Ancillary investigation is NOT required?
(Dead)
2.Ancillary investigation is required?
(Not Dead)

Not dead (but only from 01/01/2025)
2008 code - If both eyes were not visible clinical criteria alone would generally be considered inadequate.
2025 code – Need both eyes/ears

Prior to 01/01/2025 Dead- (arguable) If both eyes were not visible clinical criteria alone would generally be considered inadequate. Currently One eye/ear ok, no eyes/ears = NO.
BUT code of practice is being reviewed and likely to be stricter i.e Eyes are important determinant and both eyes are required.
Do the clinical testing to the best of ability but add in ancillary testing.

Question 12
The patient is on ECMO?

1.Ancillary investigation is NOT required?
(Dead)
2.Ancillary investigation is required?
(Not Dead)

Dead–supplementary consensus guidance has been published.
Apnoea Test needs adaption. "Apnoea testing on ECMO requires maintenance of the extracorporeal blood flow with a membrane sweep gas FiO2 100% in order to preserve systemic oxygenation. The sweep gas flow rate can then be manipulated to achieve the starting PaCO2 and pH requirements. During testing, it is important to titrate the sweep gas

flow downwards in small decrements to prevent rapid changes in PaCO2 and potential precipitation of further neurological injury."
Refer to FICM Diagnosis of death supplementary guidance FICM ICS Standards Committee NHS England Severe Respiratory Failure Network For adults and children older than 16 years
https://www.ficm.ac.uk/standardssafetyguidelinesstandards/ficm-guidelines-resources

Question 13
The patient has cervical spinal cord injury?

1.Ancillary investigation is NOT required?
(Dead)
2.Ancillary investigation is required?
(Not Dead)

Not Dead–apnoea test is invalid!
If spinal cord injury = ancillary investigation. Recent RCPCH safety alert. .If cervical spine injury 3 options
1.MRI to show no cord damage.
2.Ancillary investigation.
3.Don't diagnose DNC
Diagnosis of death using neurological criteria - guidance regarding not performing the Apnoea Test in the context of evidence of high cervical spinal cord injury | RCPCH

The final 3 questions are on the validity of a diagnosis of DNC.

1.The diagnosis remains valid?
(Dead)
2.The diagnosis is NOT valid?
(Not Dead)

APPENDIX A

Deceased Donation Structured Debrief

Group Number:

Vent - "How did that feel?"

Aims – "What were your aims going into the scenario? What happened?" Leads to debriefing planning conversation with good judgement.

Top Tips:

Good judgement
- It worried me when…
- I was concerned that….
- I was impressed by...

A =Accuracy
- Be truthful
- Use the word death
- Summarise to gauge understanding

B = Brevity
- Slow the pace
- Use silences

C = Clarity
- Consider visual aids
- Check understanding

D = Delivery
- tone

E-=Empathy

Non-technical points for discussion

Identify specific examples with quotes if possible.

1.

2.

3.

Any technical point for discussion

Anything else to discuss – invitation to participant and group

Learning Points

Participant If you took one thing away from this what would it be?

Faculty What would you want them to take away?

Appendix B

FICM CCT in ICM Syllabus – key components related to Deceased Donation

2021 V1.2 Guidance [Link here]

8. Doctors specialising in Intensive Care Medicine will understand and manage the physical and psychosocial consequences of critical illness for patients and their families, including providing pain relief, treating delirium and arranging ongoing care and rehabilitation. They will also manage the withholding or withdrawal of life-sustaining treatment, discussing end of life care with patients and their families and facilitating organ donation where appropriate.	
KEY CAPABILITIES	In order to do this, they will be expert in: • identifying and limiting the physical and psychosocial consequences of critical illness for patients and families paying particular attention to the assessment, prevention and treatment of pain and delirium • Communicating the continuing care requirements of patients at discharge from both ICU and hospital to healthcare professionals, patients and relatives. This will include the patient's plan for ongoing care, medical follow up and rehabilitation • Facilitating discussions focused on how to manage end of life care with patients and their families. The process of withholding or withdrawing life-sustaining treatments and providing palliative care whilst maintaining respect for cultural and religious beliefs will form an important element of this • Diagnosing death using neurological criteria and diagnosing death using circulatory criteria in time sensitive scenarios (eg donation after circulatory death). • Identifying likely organ donors, working collaboratively with specialist nurses for organ donation and facilitating the process of organ donation, including providing appropriate physiological support to the organ donor.
GPC Domains	Domain 2: Professional skills • practical skills • communication and interpersonal skills • dealing with complexity and uncertainty • clinical skills (history taking, diagnosis and medical management; consent; humane interventions; prescribing medicines safely; using medical devices safely; infection control and communicable disease) Domain 3: Professional knowledge • professional requirements • national legislative requirements • the health service and healthcare systems in the four countries Domain 5: Capabilities in leadership and teamworking
Evidence to inform decision	➢ ACAT ➢ CBD ➢ DOPS ➢ Mini-CEX ➢ Portfolio evidence of self-study eg e-LfH ➢ FFICM examinations ➢ ES Report ➢ Simulation

From 2001 guidance

8.4 Performs brain-stem death testing

Knowledge

- Basic ethical principles: autonomy, beneficence, non-maleficence, justice
- Causes of brain stem death
- Legal aspects of brain stem death diagnosis
- Applied anatomy and physiology of the brain and nervous system including cerebral blood supply, base of skull, autonomic nervous system and cranial nerves
- Physiological changes associated with brain stem death
- Preconditions and exclusions for the diagnosis of brain stem death
- Clinical, imaging and electrophysiologic tests to diagnose brain death: applicability
- Cultural and religious factors which may influence attitude to brain stem death and organ donation
- Responsibilities in relation to legal authorities for certifying death (e.g. coroner, procurator fiscal or equivalent), and reasons for referral

Skills

- Document pre-conditions and exclusions to brain stem death testing
- Consult and confirm findings of brain stem function tests with colleagues as required by local / national policy or as indicated
- Perform and document tests of brain stem function

8.5 Manages the physiological support of the organ donor

Knowledge

- Basic ethical principles: autonomy, beneficence, non-maleficence, justice
- Causes of brain stem death
- Role of national organ/tissue procurement authority and procedures for referral
- Responsibilities and activities of transplant co-ordinators
- Physiological changes associated with brain stem death
- Principles of management of the organ donor (according to national / local policy)
- Common investigations and procedures undertaken in the ICU prior to organ donation

Skills

- Explain the concept and practicalities of brain stem death and organ donation clearly
- Liaise with transplant co-ordinators (local organ donation authority) to plan management of the organ donor
- Monitor vital physiological functions as indicated
- Recognise and rapidly respond to adverse trends in monitored parameters
- Aware of the emotional needs of self and others; seeks and offers support appropriately
- Obtain consent/assent for treatment, research, autopsy or organ donation

8.6 Manages donation following cardiac death

Knowledge

- Basic ethical principles: autonomy, beneficence, non-maleficence, justice
- Common investigations and procedures undertaken in the ICU prior to organ donation
- Procedure for pronouncing life extinct and and subsequent completion of death certification
- Responsibilities in relation to legal authorities for certifying death (e.g. Coroner, Procurator Fiscal or equivalent), and reasons for referral
- Legal and ethical framework for decision making
- Role of national organ/tissue procurement authority and procedures for referral
- Transplant team members and their roles
- Responsibilities and activities of transplant co-ordinators

Skills

- Recognise when treatment is unnecessary or futile
- Identify potential non heart beating donors
- Lead a discussion about end of life goals, preferences and decisions with a patient and/or their relatives
- Participate in discussions with relatives about treatment limitation or withdrawal
- Liaise with transplant co-ordinators (local organ donation authority) and retrieval teams to plan management of the organ donor

Appendix C

Law on Organ and Tissue Donation for Scotland

Resources: https://www.odt.nhs.uk/deceased-donation/best-practice-guidance/authorisation-in-scotland/

Dr Helen Tyler, Education CLOD team (Scotland) gives a summary

On 26th March 2021 Scotland moved to an opt out system of organ and tissue donation with the implementation of the Human Tissue (Authorisation) (Scotland) Act 2019. The legislation aims to save and improve lives through increased donation and transplantation while also clarifying, and placing into law, areas of good practice in donation processes. This is a brief summary of the key points relevant to us all as professionals and as Scottish residents.

Decision making pathways

The legislation sets out 3 routes to donation authorisation (or refusal)

- **Express decision** by the individual
  - Opt in or opt out on the Organ Donor Register (ODR) or in writing.
- **Deemed authorisation.**
  - If no express decision is made, then it is assumed they are willing to donate
- **Nearest relative authorisation**
  - Only if no express decision and criteria for deemed authorisation is not met.

Public awareness raising to inform the population is required and led by Scottish Government. The media campaign provides information on the opt out law and encourages the public to make a personal decision and share this with their loved ones.

Duty to Inquire, through loved ones, regarding the patient's last known views on donation and associated tests. It is the patient's own views that are sought, to ensure their decision is honoured. This is already established good practice and is done **with the Specialist Nurses from the Organ Donation Team**, after adequate communication and acceptance of the clinical decision to move to end of life care.

Safeguards for deemed authorisation are set out and must be checked. Deemed authorisation will only occur for the purpose of transplantation, not for research or for novel processes. Through the clinical team and the patient's loved ones it will be ensured the patient is not in an excepted category, for whom authorisation cannot be deemed:

- Under the age of 16yr
- Not ordinarily resident in Scotland in the 12 months immediately prior
- Incapable of understanding the nature & consequences of deemed authorisation over a significant period.

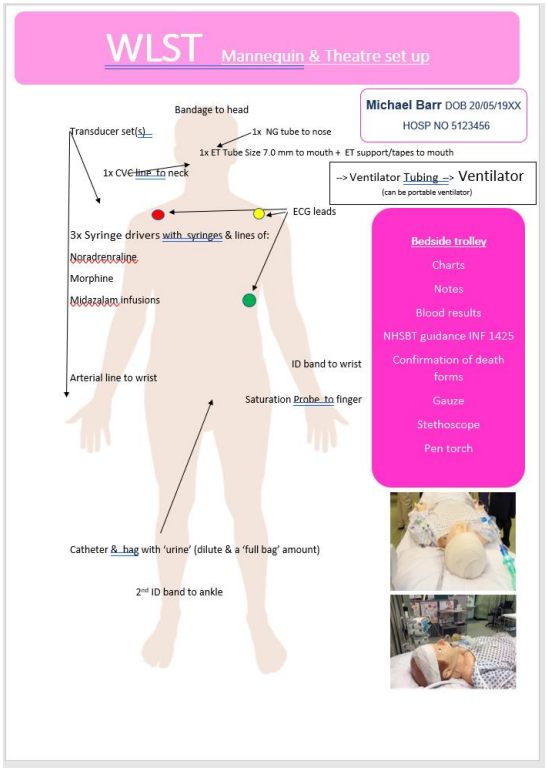
Pre Death Procedures (PDPs)

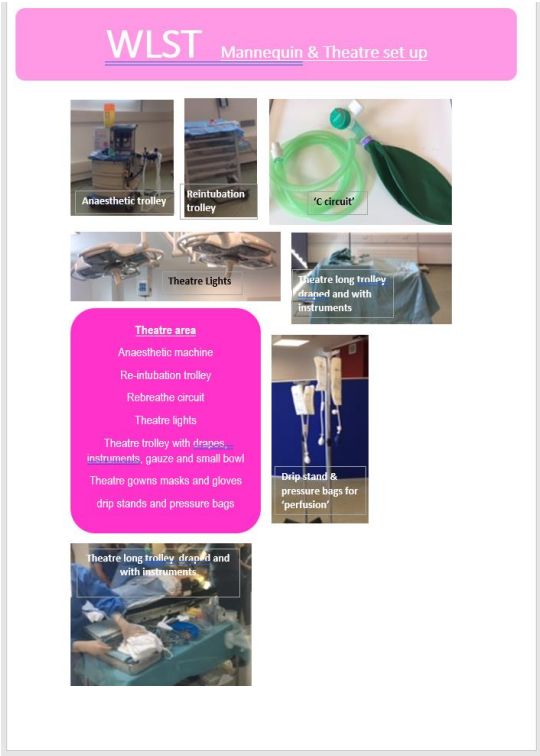
Tests and procedures carried out to facilitate safe and successful transplantation in Donation after Circulatory Death (DCD), or prior to confirmation of Death by Neurological Criteria (DNC), are carried out on a potential donor prior to their death. These PDPs are not for the purpose of providing health care to that patient and the law protects these patients in requiring certain criteria are met.

- **The duty to inquire conversation has explored the patient's views and authorisation is agreed for both donation and PDPs** (verbal is adequate).
- Tests and procedures must only be performed where necessary and the Specialist Nurses for Organ Donation will be able to guide you with detailed lists of what is defined as acceptable.

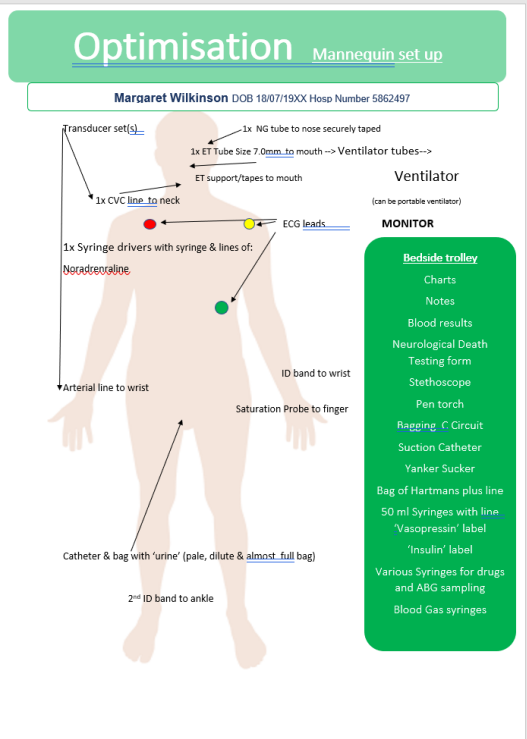
Appendix D Mannequin Room Set Ups (included in each room box)

Pink Room WoLST

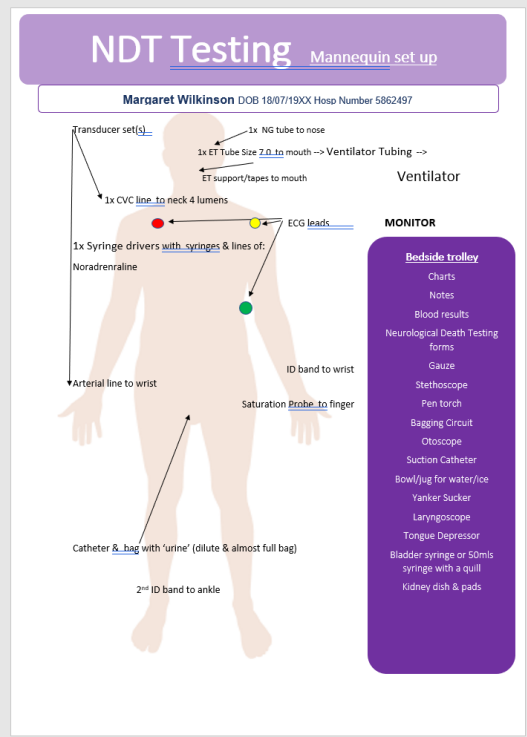


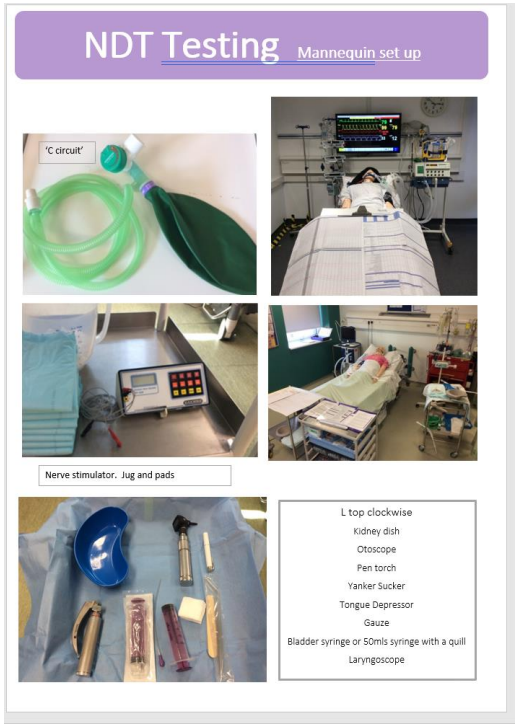


Green Room Optimise



Purple Room Testing





Optimise Simulation script

Time	HR bpm	BP mmHg	SaO2%	RR	Other
Start	100	90/70	88	20 (vent)	Eyes Closed Sinus Rhythm
No intervention	120	87/68	85%	20 (Vent)	Eyes Closed Sinus Rhythm
Airway interventions					Eyes Closed Sinus Rhythm
Post recruitment /airway interventions	110-120	65/40	100%	20 (Vent)	Eyes Closed Sinus Rhythm
Fluid and Inotropes considered					
After fluid is given	95	85/45	100%		Eyes Closed Sinus Rhythm
After vasopressin started	110	160/89	100%		Eyes Closed Sinus Rhythm
After Noradrenaline stopped	90	120/58	100%		Eyes Closed Sinus Rhythm
VT for 10 -20 secs until recognised	168	90/63	100%		10 -20 second run of VT
	90	123/58	100%		sinus
VF		34/32	90%		VF
If shock given	103	123/68	98%		sinus

Optimise Simulation script

Interventions:

Airway: The following will be considered and may be actioned.

Check of ET cuff and airway care

Perform Lung recruitment manoeuvre

Lung protective ventilation

Positioning /Sit Up

Increase PEEP on the ventilator

Suctioning and oral hygiene

Chest x-ray

Bronchoscopy

Circulation:

BP compromise and hypotension should be identified

Interventions:

- Fluid
- Vasopressin added
- Noradrenaline is weaned and stopped
- Other inotropes considered

Metabolism: no changes during this phase.

Dysrhythmias

VT Identified

Once delegates identified this and start interventions obs are restored

VF -> BP lost altogether

Interventions:

- Shock ->
- Post Shock (if given) Obs restored

Optimise Simulation Faculty Instructions

Objective:

- To identify a clear ABCDE approach
- To understand timings of interventions for positive organ donation outcome
- To understand the role the extended care bundle in donation
- To understand the role of the SNOD in supporting optimisation
- To identify where some interventions create ethical challenge
- To identify the Donation Action Framework as a helpful document in making decisions around donor interventions (used in England and Wales) or legal positioning and consent required for Type A procedures and Type B procedures (Scotland)

Start HR 100 BP 90/70 SaO2 88% RR 20 (vent)

No Intervention: will continue to drift gradually to HR 120 SaO2 85%

Central line? Or manage without? Ask the delegates to opt to keep the peripheral line and manage or opt to put in a central line. Explore reasoning, illustrate use of DAF.

If they opt to put one in, then it can be added as if completed. Use this in your discussions as optimise progresses. Think about not just physiological support but also ethics of a donor with an end-of-life decision to support and become a donor or deemed supported by their family. Does the strength of the decision support the decision making? Who would know the strength of decision and inform that evidence? **answer:** SNOD. As part of the consent process SNODs will discuss with family in detail supporting physiologically towards donation and what the family would be comfortable with for their relative). SNODs will work with the team to keep close observation of the donor and advocate for them. The SNOD will consult on if a family if deterioration occurs, what interventions are a family content to support.

A & B

Immediately post testing: Discussion around post testing recruitment manoeuvres, continued physio support, positioning, ventilation vigilance. Acknowledge SNOD role in highlighting issues and working collaboratively with the team to ensure optimisation and donor safety as well as conducting sensitive discussions with families during donation process so that optimisation interventions are not a surprise to family or cause distress.

Recruitment identified

Interventions considered:

- Recruitment manoeuvre, lung inflation either through the ventilator or via a rebreathe water's circuit.

Optimise Simulation script

- Sit Up and other positioning
- Increase PEEP on the ventilator
- Suction + physio discuss engaging physio to do optimise more fully to support lung donation
- Check ET cuff
- Xray - timing? After interventions to increase likelihood of lungs being accepted?
- Bronchoscopy
- Consider injuries if trauma patient and mitigations to optimise oxygenation.

Post recruitment HR 110 BP 65/40 SaO2 100% RR 20 (vent)

Hypotension Identified

Interventions considered:

- **Fluid**
- **Vasopressin (explore advantages to transplanted organs)**
- **Noradrenaline is stopped (explore why)**
- **Explore if no central line has been opted for ethics at this stage with a consented donor supporting a patient's decision or family supporting deemed situation**

Post Fluid HR 95 BP 85/45 SaO2 100%

Post Vasopressin HR 110 BP 160/90 SaO2 100%

Stop Norad HR 102 BP 120/70 SaO2 98%

Metabolic

Explore metabolic disorders in light of autonomic storm

Note increased Na +/ DI -> DDAVP (+ role of vasopressors)

Consider 5% Dextrose

Methyl pred supports stability

Insulin – Note BM increase importance of feed to stabilise blood glucose and maintain gut health in case of bowel donation

Maintenance of normothermia to support normal cellular metabolism

Dysrhythmias

10 second run of VT -> BP 110/65 then back to sinus rhythm

Discuss CPR, ethical issues around interventions

VF -> BP lost

Optimise Simulation script

Interventions:

- **Shock -> consider ethical considerations, DNAR order post NDT , family expectations when deterioration occurs and discussions with SNODs to keep recipient side in communication.**

Post Shock (if given) HR 102 BP 120/70 SaO2 98%

Sinus Rhythm

WoLST Simulation Suite Instructions

Time	HR bpm	BP mmHg	SaO2%	RR	Other
Start	100 -105	123/64	95%	15	Eyes Closed sinus rhythm
WoLST	110-115	90/64	88%	3	EXTUBATION AND DRUGS STOPPED
1 min	65	56/45	62%	0	Sinus rhythm
2 min	53	42/38	56%	0	Sinus rhythm with ectopic beats
3 min	45	36/27	unrecordable	0	Sinus rhythm with ectopic beats
4 min	35	unrecordable		0	Idioventricular rhythm
5 mins **	25	unrecordable	unrecordable	0	Idioventricular rhythm
5 mins 30	32-38	43/35 - 38/36	unrecordable	0	Idioventricular rhythm
6 mins + *	10	unrecordable	unrecordable	0	asystole

****Delegates should identify mechanical asystole and 'start the clock'**

Within 30 secs -1 min restoration of output with

BP 43-35 mmHg Syst HR 32-38 SaO2 unrecordable RR 0 for 20-30 secs

Loss of output second time at 6 mins + = final asystole

***Delegates identify mechanical asystole again and 're-start the clock'**

End

Leave them certain

Organ Donation

Intensive Care Society AWARDS 2020

Proud to be the voice of intensive care since 1970

winner