



# Edinburgh Training Package for NRP Service

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Specialist Practitioner in Organ Perfusion & Preservation

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Edinburgh

Cambridge

Birmingham

Specialist Practitioner in Abdominal Organ Perfusion & Preservation

Service Evaluation

Sustainable Service

### Role of Specialist Practitioner

- Recruiting/Developing a core team
- Designing/Delivering education & training
- Establishing competencies
- Managing equipment
- Developing rota
- Reviewing service
- Co-ordinating the service



### Recruitment – establishing a core team

Surgeons

- Specialist Practitioner
- Theatre Practitioners
  - perfusion/preservation



















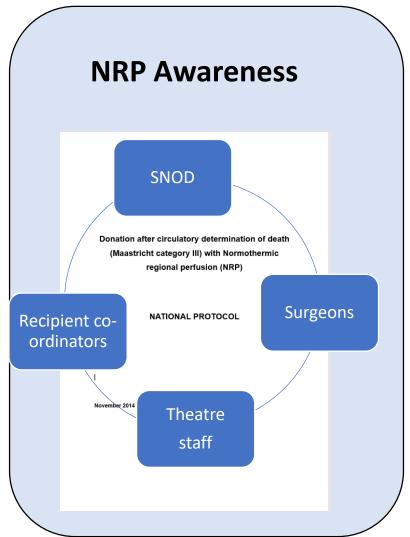


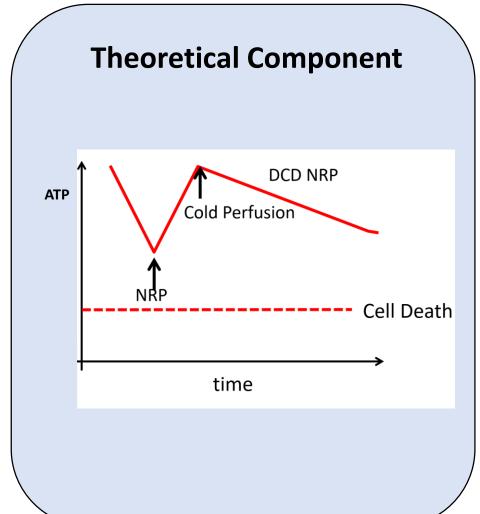




- scrub
- SNOD team
- Liver/Renal Recipient Coordinators
- Donor Hospital Staff
- Transport

### **Education and Training**





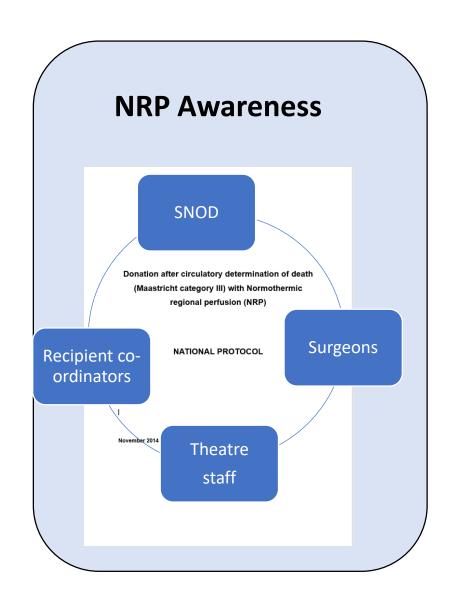


### Education and Training:

• Why NRP?

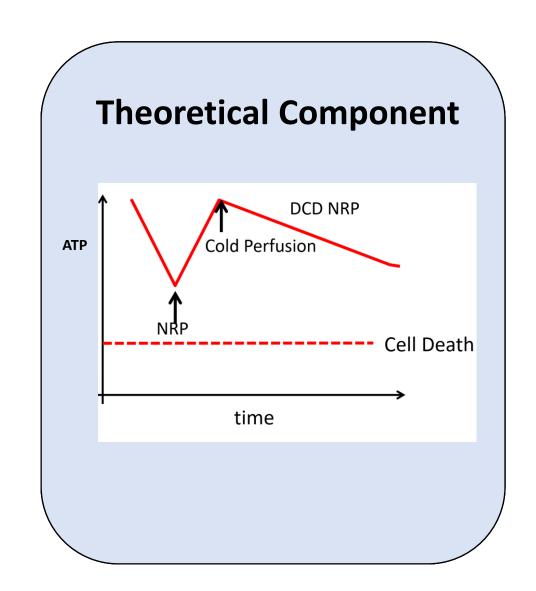
• What is NRP?

• Benefits



### Education and Training:

- What happens in cells during DBD retrieval?
- What happens in cells during DCD retrieval?
- What happens in cells during DCD with NRP?



### **Education and Training:**

- Pre –retrieval setup
- Composition of Priming solution
- Surgical Protocol/Cannulation
- Pump/ Circuit Training
- Troubleshooting
- Blood Sampling/Blood Analysers
- Paperwork/documentation
- Standard Operating Procedure



### **Practical Component**

One to one/group sessions

Dry Runs (including all team members)

Actual donor attendance – supervised and competencies established







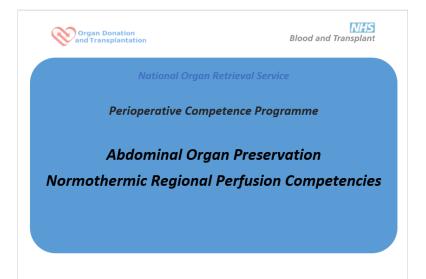


### Competency structure

NHS Lothian Normothermic Regional Perfusion (NRP)

#### **Training session with Maquet Getinge Group**

- Configuration and data setup for Cardiohelp
- Normal use
- Trouble-shooting

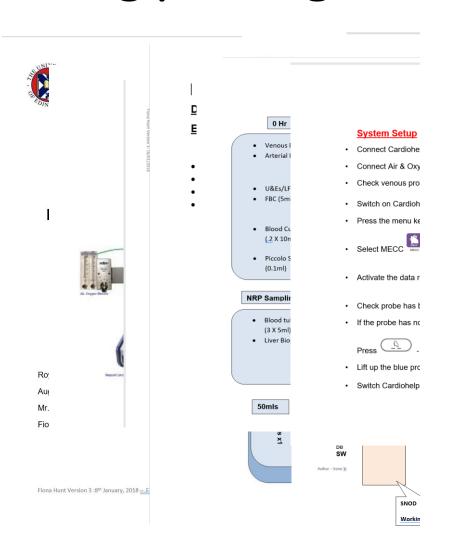


#### Training Sessions with Registered Practitioner competent in Normothermic Regional Preservation (NRP)

- •Fluency in all steps of the Surgical protocol
- Correct selection and preparation of equipment
- Assembly and priming of circuit
- Establishing NRP
- Discontinuation of NRP and conversion to Cold Preservation
- NRP troubleshooting
- Clinical and biochemical organ function monitoring
- Disassembly and cleaning
- Data monitoring and collection

| Organ Donation and Transplantation   | Blood and Transpla                  |                                     |                                     |                                     |                                 |  |
|--|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|---------------------------------|--|
| Competence   | Assessor<br>Initials<br>(formative) | Assessor<br>Initials<br>(formative) | Assessor<br>Initials<br>(formative) | Assessor<br>Initials<br>(formative) | Assesso<br>Initials<br>(summati |  |
| NRP system set-up: Demonstrates the ability to assemble and prepare the NRP console and pump in line with manufacturer's instructions in preparation for use.  |                                     |                                     |                                     |                                     |                                 |  |
| Assembly of Circuit: Demonstrates the ability to assemble the circuit in line with<br>manufacturer's instructions accounting for the requirements to maintain sterility within the<br>surgical field.  |                                     |                                     |                                     |                                     |                                 |  |
| Priming & De-airing: Can clearly demonstrate the ability to correctly prime the circuit in<br>accordance with national protocol whilst adhering to manufacturer's guidelines.  |                                     |                                     |                                     |                                     |                                 |  |
| Establishing NRP: Can demonstrate ability to establish NRP circuit when instructed by lead<br>surgeon – increasing flow rate, releasing venous clamp, ensuring adequate venous<br>drainage, releasing arterial clamp & increasing blood flows within agreed parameters.          |                                     |                                     |                                     |                                     |                                 |  |
| During NRP: Demonstrates ability to control and maintain NRP circuit within the<br>parameters set out in the National Protocol, can show awareness of circuit <u>problems</u> (clots,<br>bubbles, loss of volume) and discuss and perform NRP roubleshaotian measures correctly. |                                     |                                     |                                     |                                     |                                 |  |
| Demonstrates the obility to perform biochemical, hoematological & blood gas onalysis as<br>per protocol.   |                                     |                                     |                                     |                                     |                                 |  |
| Demonstrates an awareness of clinical and biochemical evaluation of the abdominal organs.  |                                     |                                     |                                     |                                     |                                 |  |
| Can show clear understanding and discuss the haemodynamic and biochemical goals<br>suggested in the National Protocol and can provide the rationale behind giving certain<br>prescribed additives to perfusion fluid.  |                                     |                                     |                                     |                                     |                                 |  |
| Post NRP: Demonstrates the ability to cease NRP and covert to cold perfusion as per<br>surgical protocol in both planned and emergency scenarios.  |                                     |                                     |                                     |                                     |                                 |  |

### Training pack –guide from start to finish



#### <u>Haemodyr</u>

#### • Pump fl

- Temper
- O<sub>2</sub> 2-4 maintai
- pH 7.35 required
- PaO<sub>2</sub>: :
- Haemat

#### TROUBLE SHOOTING

## 1. From 1. Hold the said till you

#### 1. Frozen Screen

 Hold down the safety button [1] and at the same time press the rotary knob [2] till you see the touchscreen calibration screen.



UK TRANSPLANT REGISTRY

#### Normothermic regional perfusi

#### Maguet Heater Unit Cleaning Protocol

CHANGING THE WATER AND DISINFECTING THE SYSTEM

Change the water in the water tank at least every two weeks and disinfect the HU 35 and tubes as follows:

- 1. Switch off the HU 35 and disconnect it from the power supply.
- 2. Drain off the water completely:
- Put a container under the HU 35 or place the HU 35 by a sink or other means of drainage.
- Unscrew the filler neck cap (e.g., using a coin). Tip the HU 35 backwards 45° and screw off the cap of the outflow point to drain off the water. Make sure that you do not lose the sealing rings of the two caps.
- Tip the HU 35 further back, to an angle of 90°, to completely empty the HU
  25 unit
- Close the outflow point again.

#### Disinfect the systen

This fo

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Once a

return

ODT I

NHS B

Stoke

Bristol

BS34 (

Fill the unit with water to just below the maximum marking.

- Pour the disinfectant Disifin HU 35 into the tank, following the instructions supplied with the disinfectant.
- Connect two water tubes to the HU 35. Connect the ends of the tubes with the adapter supplied with the HU 35.
- . Connect the HU 35 to the power supply and switch it on.
- . Adjust the setpoint temperature to 37°C and run the HU 35 for two hours.
- . Switch off the HU 35 and disconnect it from the power supply.
- Drain off the water completely (
   step 2).

#### 4. Flush the system:

- . Fill the unit with water to just below the maximum marking.
- Connect the HU 35 to the power supply and switch it on.
- Adjust the set point temperature to 37°C and run the HU 35 for 30 minutes.
- Switch off the HU 35 and disconnect it from the power supply.
- Drain off the water completely (□ step 2).
- 5. Flush the system again with fresh water ( step 4).
- 5. Flush the system again with hesh water ( step 4
- Fill the HU 35 with fresh water and de-air it.
- 7. Put the cap back onto the filler neck and screw it hand-tight.

### Implementation

- Rigorous protocols
- Standard operating procedures
- Competencies established
- Regular education and handson training sessions
- Brief/De-brief
- Streamline service
- Review outcomes



### Sustainable Rota

### **Adhoc Cover**

| SEPTEMBER 2013 |         |      |                                |     |       |      |  |
|----------------|---------|------|--------------------------------|-----|-------|------|--|
|                | On-call | Duty | 2 <sup>nd</sup> on-call<br>for |     | NRP   |      |  |
|                |         |      | weekend<br>only                | Y/N | Cons. | T.P. |  |
| MON            | 29 JC   | AA   | Olliy                          | N   |       |      |  |
| TUES           | 30 IC   |      |                                | N   |       |      |  |
| WED            | 31 EH   |      |                                | N   |       |      |  |
| THURS          | 1 GO    |      |                                | Y   | GO    | JS   |  |
| FRI            | 2 JP    |      |                                | N   |       |      |  |
| SAT            | 3 AA    |      |                                | N   |       |      |  |
| SUN            | 4 AA    |      |                                | N   |       |      |  |
| MON            | 5 MA    | EH   |                                | N   |       |      |  |
| TUES           | 6 IC    |      |                                | N   |       |      |  |
| WED            | 7 JP    |      |                                | N   |       |      |  |
| THURS          | 8 GO    |      |                                | Y   | GO    | JS   |  |
| FRI            | 9 IC    |      |                                | Y   | IC    | GJ   |  |
| SAT            | 10 EH   |      | IC                             | N   |       |      |  |
| SUN            | 11 EH   |      | IC                             | N   |       |      |  |
| MON            | 12 GO   | SW   |                                | N   |       |      |  |
| TUES           | 13 IC   |      |                                | N   |       |      |  |
| WED            | 14 EH   |      |                                | N   |       |      |  |
| THURS          | 15 AA   |      |                                | N   |       |      |  |
| FRI            | 16 SW   |      |                                | N   |       |      |  |
| SAT            | 17 SW   |      |                                | N   |       |      |  |
| SUN            | 18 SW   |      |                                | N   |       |      |  |
| MON            | 19 AA   | JР   |                                | N   |       |      |  |
| TUES           | 20 EH   |      |                                | N   |       |      |  |
| WED            | 21 IC   |      |                                | N   |       |      |  |
| THURS          | 22 GO   |      |                                | Y   | GO    | JS   |  |
| FRI            | 23 ЈР   |      |                                | Y   |       |      |  |
| SAT            | 24 ЈР   |      |                                | N   |       |      |  |
| SUN            | 25 ЈР   |      |                                | N   |       |      |  |
| MON            | 26 SW   | JC   |                                | N   |       |      |  |
| TUES           | 27 IC   |      |                                | Y   | IC    | GJ   |  |
| WED            | 28 JP   |      |                                | N   |       |      |  |
| THURS          | 29 AA   |      |                                | N   |       |      |  |
| FRI            | 30 GO   |      |                                | Y   | GO    | RD   |  |
| SAT            | 1 JC    |      | GO                             | Y   | GO    | RD   |  |
|                |         |      |                                |     |       |      |  |

### 93% NRP Cover

| September 2018 |              |      |                             |     |       |        |                          |  |
|----------------|--------------|------|-----------------------------|-----|-------|--------|--------------------------|--|
|                | On-call      | Duty | 2 <sup>nd</sup> on-         | NRP |       |        |                          |  |
|                |              |      | call for<br>weekend<br>only | Y/N | Cons. | Reg.   | T.P.                     |  |
| Sat            | 1 GO/LM      |      |                             | Υ   | GO    | BS/GP  | 1st:GJ/CS                |  |
| Sun            | 2 GO/LM      |      |                             | Υ   | GO    | BS/GP  | 2 <sup>nd</sup> :FH/LM   |  |
| Mon            | 3 AA/AS      |      |                             | Υ   | AS    | SO/GP  | AM/LC                    |  |
| Tues           | 4 IC/SWA/SF  |      |                             | Υ   | IC/SF | RG/HE  | SF/KH                    |  |
| Wed            | 5 JPO/LM     |      |                             | N   |       | ASH/SS | AS/SS                    |  |
| Thurs          | 6 GO/AS      |      |                             | Y   | GO/AS | BS/GP  | GJ/PR                    |  |
| Fri            | 7 SJW/JT/SF  |      |                             | Y   | JT/SF | RG/SS  | 1st:AM/AS                |  |
| Sat            | 8 JPO/AS     |      |                             | Υ   | AS    | JK/ASH | 2 <sup>nd</sup> :LF/SS   |  |
| Sun            | 9 JPO/AS     |      |                             | Υ   | AS    | JK/ASH |                          |  |
| Mon            | 10 GO/SC     |      |                             | Υ   | GO/SC | MH/GP  | LC/FH                    |  |
| Tues           | 11IC/JC      |      |                             | Υ   | IC    | ASH/CJ | RD/SS                    |  |
| Wed            | 12 JPO/SC    |      |                             | Υ   | SC    | SO/GP  | SF/LM                    |  |
| Thurs          | 13 SJW/AS    |      |                             | Υ   | AS    | EL/SS  | AB/CH                    |  |
| Fri            | 14 AA/SWA    |      |                             | N   |       | MH/GP  | 1st:AS/LC                |  |
| Sat            | 15 IC/JT     |      |                             | Υ   | IC/JT | CJ/GR  | 2 <sup>nd</sup> :AMRH    |  |
| Sun            | 16 IC/JT     |      |                             | Υ   | IC/JT | CJ/GR  |                          |  |
| Mon            | 17 AA/SC     |      |                             | Υ   | sc    | SO/ASH | AB/LM                    |  |
| Tues           | 18 GO/AS/SWA |      |                             | Υ   | GO/AS | GP/SS  | LF/AS                    |  |
| Wed            | 19 EH/AS     |      |                             | Υ   | AS    | MH/GR  | GJ/LC                    |  |
| Thurs          | 20 JPO/JT    |      |                             | Υ   | JT    | EL/GP  | JF/CS                    |  |
| Fri            | 21 GO/SWA    |      |                             | Υ   | GO    | SO/HE  | 1st:AS/PS                |  |
| Sat            | 22 AA/SC     |      |                             | Υ   | sc    | MH/SS  | 2 <sup>nd</sup> :SJ/FdeT |  |
| Sun            | 23 AA/SC     |      |                             | Υ   | SC    | MH/SS  |                          |  |
| Mon            | 24GO/LM      |      |                             | Υ   | GO    | RG/EL  | SF/JdeW                  |  |
| Tues           | 25 AA/AS     |      |                             | Υ   | AS    | SO/GP  | LF/SS                    |  |
| Wed            | 26 EH/SC     |      |                             | Υ   | SC    | JK/ASH | AB/LM                    |  |
| Thurs          | 27IC/JT      |      |                             | Υ   | IC/JT | MH/HE  | AS/CS                    |  |
| Fri            | 28 EH/AS     |      |                             | Υ   | AS    | RG/EL  | LF/RA/KP                 |  |
| Sat            | 29 SJW/SWA   |      |                             | N   |       | JK/ASH | AB/LC                    |  |
| Sun            | 30 SJW/SC    |      |                             | N   |       | JK/ASH |                          |  |
|                |              |      |                             |     |       |        |                          |  |

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