OPERATIVE DETAILS — Section 1

Donor Hospital		NRP Centre	
Name		NRP Centre Contact Number	
DoB		Cardiothoracic Retrieval (circle)	NO / LUNG / HEART / TA NRP
NHS or CHI No		Cardiothoracic Team(s)	
		CT Lead Surgeon (PRINT)	
ODT Donor No		CT Organ Preservation	
Blood Group		NRP Perfusion Specialist	
Height (cm) / Weight (kg) / Girth (cm)	/ /	AB Organ Preservation	
Donor allergies		NRP Surgeon (PRINT)	
SNOD		NRP Surgeon contact no	
SNOD contact no		NRP Surgeon signature	

By signing here, the NRP surgeon is prescribing all drugs, fluids, and blood products as initialled on chart

FLUIDS/EQUIPMENT — Section 2

PRIME

	Amount/Vol	Expiry	Batch/Ref (DIN)	Rx	Checked	Given
Sterile Circuit						
Hartmann's Solution	1000ml					
Hartmann's Solution	1000ml					
Sodium Bicarbonate 8.4% (1ml/kg)						
Heparin	50,000 units					
Fluconazole 2mg/mL	400mg					
Teicoplanin	200mg					
Gentamicin	120mg					
Metronidazole	500mg					
Methylprednisolone	1g					
Phentolamine	5mg					

ADDITIONAL FLUIDS

Blood						
Blood						
Blood						
Blood						

CANNULATION AND CIRCULATION — Section 3

Arterial cannulation site (circle)	Femoral / EIA / CIA / Aorta	Arterial cannula size	
Venous cannulation site (circle)	Femoral / EIV / CIV / IVC	Venous cannula size	
Ascending aortic vent cannula	**Mandatory prior to NRP start**	Vent cannula size	
Descending thoracic aortic occlusion method (circle)	External CLAMP	IVC clamp on (circle)	YES / NO
	Endoclamp (Scotland only)	SVC clamp on (circle)	YES / NO

PUMP PARAMETERS — Section 4

Clock Time / NRP Duration	Blood Flow	FiO_2	Gas Flow (l/min)	SvO_2 %	HCT %	Reservoir Volume	Temp °C	Notes
0								
10								
20								
30								
40								
50								
60								
70								
80								
90								
100								
110								
120								

GASES — Section 5

Clock time								
NRP duration	0		30		60	90	120	
Sample type (A/V)								
pH								
pCO_2								
pO_2								
HCO_3								
BE								
Sats								
Lact								
Na^+								
K^+								
Gluc								
Ca^{2+}								
Hct								
Hb								

BIOCHEMISTRY — Section 6

Clock time								
NRP duration	0		30		60	90	120	
Gluc								
Urea								
Crea								
Uric Acid								
Ca								
ALB								
Tot Prot								
ALT								
AST								
ALP								
Bili								
GGT								
AMY								

TIMINGS **Section 7**

WLST location (circle) ITU / THEATRE SUITE

WLST

Systolic BP < 50 mmHg

Asystole

Verified Deceased

Knife to skin

Aortic arch vented

NRP Start (Time 0)

NRP stop time

In situ cold Flush

ORGAN QUALITY ASSESSMENT **Section 8**

Liver weight . kg QUOD Box No NRP Box No

Minimum dataset:
LFT/amylase is **0, 60 and 120 minutes.**
Glucose, lactate and haemoglobin data are required at **0, 30, 60, 90 and 120 minutes.**
Blood cultures may be taken at **0 and 120 minutes.** This is optional.

	0	30	60	90	120	Validating Lab	Notes
ALT (U/l)							
BILI (umol/l)							
AMYLASE (U/l)							
GLUCOSE (mmol/l)							
LACTATE (mmol/l)							
Hb (g/l)							
BLOOD CULTURES (optional)							

Guidance Notes for the NRP Passport and NRP Management (FRM6725)

Section 2. Fluids/Equipment

Hartmann's solution is used in the Prime. Blood may also be used in the prime for paediatric donors, in TANRP or if starting haemoglobin is low. Hartmann's contains high levels of lactate (27mM) and if added after pump start, will lead to confusion regarding lactate metabolism by the liver.

Avoid further Hartmann's solution once NRP has commenced as it contains lactate.

Section 5. Gases

Arterial blood gases are essential to ensure appropriate acid-base status, tissue oxygenation and CO_2 levels and best describe oxygenator function and acid base status. Repeated arterial blood gases are **strongly recommended** for safe perfusion in NRP.

pH and Bicarbonate. pH<7 or H+>100nmol/l at time 0 can lead to mitochondrial dysfunction. Therefore add 25ml (or 50ml) 8.4% $NaHCO_3$ once, as early as possible in this situation. The resolution of acidosis during NRP is an index of organ quality so adding more bicarbonate later will be confusing.

Avoid further Bicarbonate administration once NRP is in progress.

$PaCO_2$. Optimise arterial CO_2 by adjusting gas flow rate. If $PaCO_2$ is <4.5kPa, decrease gas flow rate; if $paCO_2$>6.0 kPa, increase gas flow rate.

Optimise **PaO_2** by changing FiO2 alone.

Venous blood gases give an accurate measurement of SvO_2. Mixed venous oxygen saturation (SvO_2) is an essential measure of tissue oxygen uptake, and hence adequacy of oxygen delivery to tissues. However, other analytes in venous gases (pH, pCO_2 etc) cannot be used to gauge acid-base status or gas exchange accurately, as normal venous ranges are not defined. This is why arterial blood gases are recommended for safe perfusion.

SvO_2 between 60% and 80% indicates satisfactory oxygen delivery (good flow, good arterial O_2, adequate Hb) to tissues.

Optimise SvO_2 by adjusting pump flow rate. If SvO_2 <60%, increase pump flow; if SvO_2 >80% decrease pump flow (NB; Hb needs to be >60g/l for SvO_2 to be reliable).

When interpreting arterial gases, at least one set of venous gases should be performed for to confirm the SvO_2 monitor on the perfusion device is reading correctly. They tend not to read well if Hb is low, which may trigger transfusion to promote adequate oxygen delivery.

Section 8. Organ Quality Assessment Bloods.

The 'Validating Lab' is the NHS Laboratory which quality assures the point-of-care-testing ('POCT') device which is used in the donor theatre for rapid blood results. This will either be the donor hospital lab, for bloods tested with donor hospital equipment, or the NORS base hospital lab which has provided quality assurance for the POCT devices used by the NORS team, or both.

LFTs and gases are processed with POCT devices ('Piccolo', 'i-Stat') or via the Donor Hospital Lab. Haemoglobin and lactate are measured on the gas sample. Whichever device/laboratory is used, please ensure that the same device/laboratory/sample type is used on each occasion.

Red cells in a gas sample may settle to the bottom of a sample tube, and cause inaccurate Hb readings. Please ensure gas samples are well mixed prior to analysis.