PERForm Registry Version 4.0

PERForm Registry

Demographics & Case Details

Patient Last Name: (#5)

Patient Middle Initial: (#10)

Patient First Name: (#15)

Date of Birth: (#20)

Gender: (#25) ☐ M ☐ F

Medical Record Number: (#30)

STS Event ID: (#40)

Demographics & Case Details

Date of Admission: (#45)

Date of Surgery: (#50)

Demographics & Case Details

Hospital Name: (#55)

Hospital NPI: (#60)

Surgeon: (#65)

Surgeon NPI: (#75)

Primary Anesthesiologist: (#80)

Primary Anesthesiologist NPI: (#90)

Perfusionist First Name: (#95)

Perfusionist Last Name: (#100)

Perfusionist Provider ID: (#105)

Perfusionist Provider ID Agency: (#110)
☐ The American Board of Cardiovascular Perfusion
☐ The Australasian Board of Cardiovascular Perfusion

Procedure Type

Procedure Type: (#115)
☐ CAB ☐ Valve ☐ CAB+Valve ☐ Other

CPB Utilization: (#117)
☐ Full CPB ☐ Combination ☐ None

Circuit Details:
☐ Circuit 1 ☐ Circuit 2 ☐ Circuit 3 ☐ None Listed

Circ Arrest: (#118)
☐ No ☐ Yes

Circuit and Bypass Thumbprint

Heart Lung Machine: (#120)
☐ CenturyTM - Heart Lung Machine
☐ Getinge - HL 20
☐ LivaNova - C5
☐ LivaNova - S3
☐ LivaNova - S5
☐ LivaNova - SC
☐ Medtronic - Performer
☐ Sarns - 5000
☐ Sarns - 8000
☐ Sarns - 9000
☐ Spectrum Quantum
☐ Terumo - Advanced Perfusion System1
☐ Other

Perfusion EMR: (#125)
☐ No Perfusion EMR
☐ Epic
☐ General Electric - Centricity
☐ Getinge - Metavision
☐ LivaNova - Connect
☐ LivaNova - DMS
☐ PerfusionPRO
☐ Perfusion.com - On Cloud
☐ Spectrum Medical
☐ Terumo - TLink
☐ Other

Heart Lung Machine Safety Devices: (#130)
☐ Arterial Line Pressure Monitoring
☐ Cardioplegia delivery system pressure monitoring
☐ Venous Reservoir Pressure Monitoring
☐ Arterial Bubble Detector
☐ Level Sensor
☐ Arterial Outflow Temperature Monitoring
☐ Arterial Line Filter
☐ 1-Way Valve (Vent Line)
☐ 1-Way Valve (Arterial Line for Centrifugal Pump)
☐ Hard Stop Detent Controls
☐ Electronically Activated Clamps
☐ Low Speed Alarm
☐ Anesthetic Gas Scavenge Line
☐ Hand Crank
☐ Backup Gas Supply
☐ Backup Batter Supply

Heater Cooler: (#135)
☐ CardioQuip - MCH-1000(i)
☐ CardioQuip - MCH-1000(m)
☐ Cincinnati Sub-Zero - Hemotherm
☐ LivaNova - 3T
☐ Medtronic - Biocal
☐ Sarns - HX2
☐ Sarns - TCM
☐ Sarns - TCM2
☐ Sarns - 11160
☐ Terumo - Dual Heater Cooler
☐ Other

Inline Blood Gas Trending Device Type: (#140)
☐ None
☐ LivaNova - BCare5
☐ Medtronic - BioTrend
☐ Spectrum - Viper, arterial only
☐ Spectrum - Viper, venous only
☐ Spectrum - Viper, arterial & venous
☐ Terumo - CDI-500, arterial only
☐ Terumo - CDI-500, venous only
☐ Other
☐ Terumo - CDI-500, arterial & venous

Cerebral Oximetry Device: (#145)
☐ No Cerebral Oximeter
☐ CASMED - FORE-SIGHT Elite
☐ Covidien - INVOS 5100C
☐ Nonin - SensSmart X-100
☐ Other

Anticoagulation Monitoring Device: (#150)
☐ Abbott - iStat
☐ Accriva - Hemocron
☐ Accriva - Hemocron Jr
☐ Medtronic - Hepcon HMS
☐ Medtronic - Hepcon HMS Plus
☐ Medtronic - ACT Plus
☐ Other

AutoTransfusion Device: (#155)

- [ ] None
- [ ] Fresenius - CATS
- [ ] Haemonetics - Cell Saver V
- [ ] Haemonetics - Cell Saver V+
- [ ] Haemonetics - Elite
- [ ] Haemonetics - Elite +
- [ ] LivaNova - Bratt II
- [ ] LivaNova- Electa
- [ ] LivaNova - Xtra
- [ ] Metronic - Autolog
- [ ] Terumo - Fresenius CATS
- [ ] Terumo - Fresenius Kabi CATSmart Continuous Autotransfusion System
- [ ] Other

Oxygenator Type: (#160)

- [ ] Getinge - Quadrox
- [ ] LivaNova - Apex HP
- [ ] LivaNova - KiDS D100
- [ ] LivaNova - KiDS D101
- [ ] LivaNova - Inspire 6
- [ ] LivaNova - Inspire 8
- [ ] LivaNova - PrimO2x
- [ ] LivaNova - Synthesis
- [ ] Medtronic - Affinity - NT
- [ ] Medtronic - Fusion
- [ ] Medtronic - Pixie Pediatric
- [ ] Terumo - Capiox FX15
- [ ] Terumo - Capiox FX25
- [ ] Terumo - Capiox RX15
- [ ] Terumo - Capiox RX25
- [ ] Other

Arterial Filter Pore Size (Microns): (#165)

- [ ] 20
- [ ] 25
- [ ] 27
- [ ] 30
- [ ] 32
- [ ] 33
- [ ] 37
- [ ] 38
- [ ] 40
- [ ] 43
- [ ] Other

BioCoating Area: (#170)

- [ ] None
- [ ] All but Cannula
- [ ] Limited Components
- [ ] Tip to Tip

BioCoating Type: (#175)

- [ ] Baxter - Duraflow
- [ ] Gish - GBS
- [ ] Jostra - Bioline
- [ ] LivaNova - Physio
- [ ] LivaNova - SMARTx
- [ ] Maquet - Safeline
- [ ] Medtronic - Balance
- [ ] Medtronic - Cortiva
- [ ] Medtronic - Trillium
- [ ] Terumo - Xcoating
- [ ] Other

System Type: (#180)

- [ ] Open Venous Reservoir
- [ ] Closed Venous Reservoir
- [ ] No Venous Reservoir

Arterial Pump Device: (#185)

- [ ] Roller
- [ ] Jostra - Rotaflow
- [ ] LivaNova - CP5
- [ ] LivaNova - Revolution
- [ ] LivaNova - SCP
- [ ] Medtronic - Affinity CP Centrifugal Blood Pump
- [ ] Medtronic - Biomedicus
- [ ] Medtronic - BP50 Pediatric Bio-pump
- [ ] Medtronic - BPX80 Adult Bio-pump
- [ ] Terumo - Sarns Disposbale Centrifugal Pump
- [ ] Terumo - CAPIOX SP Centrifugal Pump
- [ ] Other

Systemic Leukocyte Depleting Filter Used: (#190)

- [ ] No
- [ ] Yes

Pulsatile Perfusion Used: (#195)

- [ ] No
- [ ] Yes

Augmented Venous Drainage: (#200)

- [ ] None
- [ ] Vacuum
- [ ] Kinetic

Acid Base Management Strategy: (#205)

- [ ] Alpha Stat
- [ ] Combination
- [ ] pH Stat

if pH Stat or Combination,

Cooling Phase pH Stat Used: (#210)

- [ ] No
- [ ] Yes

If Yes

pH Management - Temperature for Combination: (#215)

Warming Phase pH Stat Used: (#220)

- [ ] No
- [ ] Yes

If Yes

pH Management - Temperature for Combination: (#225)

Anticoagulation Management

Method for Monitoring Anticoagulation: (#230)

- [ ] ACT
- [ ] Heparin Concentration _____ (#)
- [ ] PT/PTT
- [ ] Other

If yes to ACT

Target ACT: (#235)

Viscoelastic Testing Used: (#240)

- [ ] No
- [ ] Yes - prior to CPB onset
- [ ] Yes, During CPB
- [ ] Yes, after CPB Cessation

Method of Determing Initial Heparin Dose: (#245)

- [ ] Fixed Weight-Based
- [ ] Heparin Dose Response

Initial Heparin Dose Given: (#250)

Method for Calculating Initial Protamine Dose: (#255)

- [ ] Protamine Not Given
- [ ] Fixed Dose
- [ ] Heparin Protamine Titration _____ (#)
- [ ] Ratio Dose of Heparin Given
- [ ] Other

If Protamine Was Given

Total Protamine Dose: (#260)

Timing of Pump Sucker Termination (#265)

- [ ] Prior to, or at initiation of, protamine delivery
- [ ] 26-50% of protamine given
- [ ] 1-25% of protamine given
- [ ] ≥50% of protamine given

Evidence of clotting in the circuit (#270)

- [ ] No
- [ ] Yes

Priming Volume

Static Volume (ml): (#275)

0.9% Saline (ml): (#280) | Plasmalyte/Normosol (ml): (#290) | Other (ml): (#300)

Lactated Ringers (ml): (#285) | Hartmanns (ml): (#295)

Albumin 5% (ml): (#305) | Albumin 25% (ml): (#315)

Starch Solution (ml): (#310)

Medication Name	Dose	Volume	Medication Name	Dose	Volume	Medication Name	Dose	Volume
Heparin (Units)	(#330)	(#335)	(#385) 2	(#390)	(#395)	(#445) 6	(#450)	(#455)
Sodium Bicarbonate (mEqs)	(#345)	(#350)	(#400) 3	(#405)	(#410)			
Mannitol (Grams)	(#360)	(#365)	(#415) 4	(#420)	(#425)			
(#370) 1	(#375)	(#380)	(#430) 5	(#435)	(#440)			

Prime RBC units: (#500) | Prime FFP units: (#505) | Total Prime Volume mL: (#507)

Bypass Details

Pump Time (min): (#520) | Clamp Time (min): (#525)

Clamp / Arrest Type (#530) ☐ Yes, Cardioplegia ☐ Yes, V Fib ☐ None

Cardioplegia solution (#535)
☐ None ☐ 1:1 ☐ 2:1 ☐ 4:1
☐ 8:1 ☐ Crystalloid ☐ Variable ☐ Crystalloid (Custodial)
☐ Microplegia ☐ Del Nido ☐ Other _____ (#540)

Cardioplegia Regime (#545) ☐ Intermittent ☐ Continuous

Topical Cooling - Heart (#550) ☐ No ☐ Yes

If Intermittent Cardioplegia Regimen,

Number of doses of cardioplegia (#555) | Maximum interval between cardioplegia doses (#560)

Induction Details
Temperature (#565) ☐ Cold ☐ Tepid ☐ Warm
Route of Cardioplegia (select all that apply) (#570) ☐ Antegrade - aortic root ☐ Antegrade - coronary ostium ☐ Retrograde

Additional Cardioplegia Administered for Electrical Activity (#562) ☐ No ☐ Yes

Maintenance Details
Temperature (#575) ☐ None ☐ Cold ☐ Tepid ☐ Warm
Route of Cardioplegia (if maintenace dosage administered, select all that apply) (#580) ☐ Antegrade - aortic root ☐ Antegrade - coronary ostium (left, right or both) ☐ Antegrade - bypass graft ☐ Retrograde

Hot Shot Used (#585) ☐ No ☐ Yes, Standard CPS ☐ Yes, Buckberg CPS ☐ Yes, Blood only ☐ Yes, Combination

First Dose Cardioplegia Volume _____ (#587)

Total Cardioplegia Volume _____ (#590)

Prox Technique Used (#595) ☐ Single Clamp ☐ Reperfusion ☐ None

Check the temperature source location, and indicate the highest and lowest temperature monitored at that source

Location	Highest	Lowest	Location	Highest	Lowest
(#635) ☐ Bladder:	(#625)	(#630)	(#635) ☐ Jugular bulb	(#625)	(#630)
(#635) ☐ Nasopharyngeal:	(#625)	(#630)	(#635) ☐ Rectal:	(#625)	(#630)
(#635) ☐ Esophageal:	(#625)	(#630)	(#635) ☐ Tympanic:	(#625)	(#630)
(#635) ☐ Other:	(#625)	(#630)			

Highest arterial (inflow) blood temperature (#705)

Target CPB Separation Temp: (#710)

Separation Target Site: (#715)
- ☐ Bladder
- ☐ Nasopharyngeal
- ☐ Other
- ☐ Esophageal
- ☐ Jugular bulb
- ☐ Rectal
- ☐ Tympanic

Hct

- First intraop HCT: (#720)
- Lowest HCT on CPB: (#740)
- First HCT on CPB: (#725)
- Last HCT in Room: (#747)
- Last HCT on CPB: (#730)
- HCT prior to Circ Arrest: (#750)
- Last PreCPB HCT: (#735)

Lab Values

- Last preCPB lactate: (#755)
- Last lactate on CPB: (#760)

Product Type			Intraop (CPB) Vol	Intraop (CPB) Units	Intraop (no CPB) Vol	Intraop (no CPB) Units
RBC:	(#765) ☐ No	☐ Yes		(#770)		(#775)
FFP:	(#780) ☐ No	☐ Yes		(#785)		(#790)
Platelets:	(#795) ☐ No	☐ Yes		(#800)		(#805)
Cell Saver:	(#810) ☐ No	☐ Yes		(#815)		(#820)
Whole Blood:	(#825) ☐ No	☐ Yes	(#830)		(#835)	

Was the RBC Volume washed with cell saver prior to administration? (#840) ☐ No ☐ Yes

HCT prior to:	Reason for transfusion (select all that apply) (#850)		
First RBC Unit transfused (#845)	☐ HCT level	☐ Low SVO2	☐ Low Reservoir Level
	☐ Pressor Requirement	☐ Cerebral Oximetry	☐ Patient Age
	☐ Cerebrovascular Disease	☐ Acute Hemorrhage	

HCT prior to:	Reason for second transfusion (select all that apply) (#895)		
Second RBC Unit transfused (#890)	☐ HCT level	☐ Low SVO2	☐ Low Reservoir Level
	☐ Pressor Requirement	☐ Cerebral Oximetry	☐ Patient Age
	☐ Cerebrovascular Disease	☐ Acute Hemorrhage	

- 0.9% Saline (ml): (#900)
- Lactated Ringers (ml): (#905)
- Plasmalyte/Normosol (ml): (#910)
- Hartmanns (ml): (#915)
- Other (ml) (#920)

- Albumin 5% (ml) (#925)
- Albumin 25% (ml): (#930)
- Starch Solution (ml) (#935)

Total pre-CPB perioperative crystalloid volume (ml): (#940)

Total Volume Added (system calc)

Circulatory Arrest

If Circulatory Arrest Was Used

- Circulatory Arrest Time (min): (#1005)
- Duration of Cooling: (#1010)
- Topical Cooling - Brain: (#1015) ☐ No ☐ Yes
- Pre Circ Arrest Medications (#1027) ☐ No ☐ Yes
- Cerebral Flow Rate (cc/min): (#1025) ☐ <400 ☐ 400-799 ☐ 800-1199 ☐ 1200-1599 ☐ 1600-1999 ☐ >=2000
- If yes, select all that apply (#1030) ☐ Mannitol ☐ Thiopental ☐ Other ☐ Magnesium ☐ Steroid bolus
- Direction of Cerebral Perfusion: (#1035) ☐ None ☐ Antegrade ☐ Retrograde ☐ Both
- If Antegrade or Both Route Cerebral Perfusion: (select all that apply) (#1040) ☐ Axillary ☐ Innominate graft ☐ Innominate direct ☐ Left carotid direct

Return to Bypass

Return to bypass: (#1045) ☐ No ☐ Yes

If return to bypass

Bypass Additional Minutes: (#1050) _____

Reason (select all that apply):

☐ Hemodynamic instability (#1055) ☐ Respiratory insufficiency (#1065) ☐ Technical - Graft revision (#1075)

☐ Technical - Bleeding (#1060) ☐ Technical - Valve (#1070) ☐ Other (#1080)

Reason: _____ (#1085)

Medications Given

Furosemide Total Dose (mg): (#1100) _____

Sodium Bicarb Total Dose (mEq): (#1105) _____

Vasopressors given during CPB (#1107) ☐ No ☐ Yes

If yes, check all that apply (#1110)

☐ Vasopressin Dosage _____ (#1115)

☐ Norepinephrine Dosage _____ (#1120)

☐ Phenylephrine Dosage _____ (#1125)

Volume Management

Urine output

Pre-CPB _____ (#1130) Intraop CPB _____ (#1135) Post-CPB _____ (#1137)

Highest post-operative creatinine within 1st 48hrs (#1145) _____

Residual Pump Volume Processing

Direct Infusion (#1150) ☐ Centrifugation (ATS) (#1155) ☐ Ultrafiltration (#1160) ☐

Autologous Circuit Prime (#1165)

☐ No ☐ Yes If yes, ml (#1170) _____

Ultrafiltration

Conventional UF (#1175) ☐ No ☐ Yes Zero balance UF (#1180) ☐ No ☐ Yes Post CPB UF (#1185) ☐ No ☐ Yes

Ultrafiltrate Vol (ml)

Intraop CPB _____ (#1190) Intraop PostCPB _____ (#1195)

Autologous Blood Harvest (#1200)

☐ No ☐ Yes

Volume (ml) _____ (#1205) Returned preCPB (ml) _____ (#1210) Returned on CPB (ml) _____ (#1215)

Unprocessed cardiotomy suction returned to bypass circuit (#1220) ☐ No ☐ Yes

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Glucose Management

1st Intraop (g/dl) _____ (#1225) Highest Intraop (g/dl) _____ (#1230) Last Intraop (g/dl) _____ (#1235)

Intraop insulin drip (#1240) ☐ No ☐ Yes

Inotrope Usage

Wean from CPB (#1245) ☐ No ☐ Yes If yes, # _____ (#1250)

at ICU arrival _____ (#1255) @ 4hrs postop _____ (#1260) @48hrs postop _____ (#1265)

Patient Safety

Perfusion Checklist (#1300) ☐ No ☐ Yes

Transfer of care (#1305) Did Transfer of care occur? ☐ No ☐ Yes (#1310) Transfer of care timing

If yes, timing (check all that apply)

☐ Prior to CPB ☐ During CPB ☐ After CPB

Did an adverse safety event occur? (#1313) ☐ No ☐ Yes

if yes, select all adverse safety events that apply (#1315)

☐ Air Lock ☐ Arterial Air ☐ Electrical Failure ☐ Gas Supply Failure

☐ Level Sensor ☐ Medication Error ☐ Oxygenator Failure ☐ Pumphead Failure

☐ Thrombus ☐ Transfusion Error ☐ Venous Air ☐ Other