ECLS Registry Form
Extracorporeal Life Support Organization (ELSO)

** *The highlighted text means it is a Mandatory Data Field (minimal requirement)*

Please refer to the ELSO Registry Data Definitions Document for Details

Unique ID: _____

Birth Date: _____
(include time for neonates)

Sex: _____ (M, F, unknown)   Race: _____ (Asian, Black, Hispanic, White, Middle Eastern or North African, Native American, Native Pacific Islander, Other, Unknown)

Hospitalizations

Admission Date/Time: _____

Weight (kg): _____   Height (cm): _____

Discharged Alive / Transferred on ECMO (Final outcome of this hospitalization)

- *If the patient was transferred on ECMO, enter the ECLS Stop Date/Time as the Discharged Date/Time and the Discharged Date/Time will autopopulate.*
- *Select of an ELSO Center will allow either entering ELSO Center Number or typing name of Center. Non-ELSO Center is a free text field.*
- *Death Date/time is allowed to be prior to time off ECMO in the case of Brain Death – must enter brain death as a complication.*

☐ Yes   ☐ No   ☐ On ECMO

☐ ELSO Center? ELSO Center ID: _____

Hospital Discharge Date/Time: _____   ☐ Non ELSO Center? Name of Center: _____

Death Date/Time: _____

Patient transported to your center

☐ Transported on ECMO   ☐ Transported not on ECMO   ☐ Not Transported   ☐ Unknown
- *If the patient was transferred on ECMO, enter the ECLS Start Date/Time as the time that your Center assumed care for the patient*
- *Select of an ELSO Center will allow either entering ELSO Center Number or typing name of Center. Non-ELSO Center is a free text field.*

☐ From an ELSO Center? ELSO Center number: _____   ☐ From a Non-ELSO Center? Center Name: _____

☐ Cannulated with Mobile ECMO?

- *To cannulations by a mobile ECMO team either outside a hospital or within a separate hospital from the mobile ECMO team's home hospital.*

Discharge Location

☐ Home   ☐ Transfer to LTAC
☐ Transfer to Another Hospital   ☐ Transfer to Rehab
☐ Other, Unknown   ☐ Transfer to Hospice

Run Information

Date/Time On: _____   Date/Time Off: _____   Support Type: ☐ Pulmonary
Run No: _____   ☐ Cardiac
Weight (kg): _____ or ☐ Unknown   Height (cm): _____ or ☐ Unknown   ☐ ECPR

ECLS mode: ☐ V-A (Venoarterial) ☐ V-V (Venovenous) ☐ V-VA (Veno - venoarterial) ☐ A-VCO2R
☐ VV-ECO2R   ☐ VP (Venopulmonary)   ☐ Other

Intubation:
☐ Yes, Date/Time Known: _____
☐ Pre-existing invasive Ventilation: _____
☐ Yes, Date/Time Estimated: _____
☐ Yes, Date/Time Unknown
☐ No

Neonatal patients only:

Birth weight (kg): _____   Gestational age: _____

Apgar (1 min): _____   Delivery: _____ (Vaginal, ER or Elective C-section, Unknown)

Apgar (5 min): _____   Maternal age: _____

CDH: ☐ Y ☐ N ☐ Unknown

CDH Repair: _____ (Pre-ECLS, On ECLS, Post-ECLS)

Date/Time of repair: _____

Bridge to transplant?   ☐ Y ☐ N ☐ Unknown   Pre-ECLS cardiac arrest?   ☐ Y ☐ N ☐ Unknown

Is Trauma the underlying reason for ECLS?   ☐ Y ☐ N ☐ Unknown (if yes, consider completing the Trauma Addendum)

This patient was transferred OUT of my Center On ECMO and transferred back IN to my Center on ECMO

☐ Y ☐ N

	#1	#2	#3
Start Date/Time			
End Date/Time			
Transferred to ELSO Center			
Transfered to Non ELSO Center			

Pre-ECLS Assessment

ABG: Closest to/before ECLS, no more than 6 hours before ECLS

Date/Time: _____
FiO2 (at ABG draw): _____ (%)
Lactate: _____ (mmol/L)

pH: _____ unknown? ☐
PaCO2: _____
PaO2: _____
HCO3: _____ unknown? ☐

SaO2(%): _____
SpO2 (%): _____

Vent Settings: Closest to/before ECLS, no more than 6 hours before ECLS

No Ventilator in use: ☐
Date/Time: _____
Vent Type: _____ unknown/unavail? ☐
(Type: Other, Conventional, HFO, Other HFV, No Ventilator)
Rate(BPM) or Hz: _____
PIP/Ampl: _____
PEEP: _____
MAP: _____

Hand bagging: ☐ Y ☐ N ☐ Unknown
(Select if hand bagged beginning in the 6hrs pre ECLS AND continuing to the time of cannulation)

Hemodynamics (Closest to and before ECLS start, ideally no more than 6 hours before ECLS start)

Date/Time: _____
Systolic BP: _____ unknown/unavail? ☐
Diastolic BP: _____ unknown/unavail? ☐
Mean BP: _____
SvO2: _____

Systolic PAP: _____
Diastolic PAP: _____
Mean PAP: _____
PCWP: _____
Cardiac Index: _____

Pre ECLS Support

Mechanical Cardiac Support (Select those used or in place within 24 hours pre ECLS)

☐ Cardiac pacemaker   ☐ Cardiopulmonary bypass (CPB)   ☐ Intra-aortic balloon   ☐ Perc Ventricular Assist Device   ☐ LVAD

☐ RVAD   ☐ BiVAD   ☐ Berlin Heart

Renal, Pulmonary and Other Support (Select those used or in place within 24 hours pre ECLS)

☐ HFOV   ☐ Inhaled Anesthetic   ☐ Liquid ventilation   ☐ Plasmapheresis   ☐ Prone Positioning   ☐ Renal Replacement Therapy   ☐

Surfactant ☐   Therapeutic Hypothermia < 35 degrees C

Medications Excluding Vasoactives (Select those used or in place within 24 hours pre ECLS)

☐ Pulmonary Vasodilators   ☐ IV Bicarbonate   ☐ Narcotics   ☐ Neuromuscular blockers   ☐ Systemic Steriods   ☐ THAM

Vasoactive Infusions (Select those used within 24 hours AND continuously for 6 hours pre ECLS)

☐ Dobutamine   ☐ Dopamine   ☐ Enoximone   ☐ Epinephrine   ☐ Esmolol   ☐ Inamrinone   ☐ Levosimendan   ☐ Metaraminol   ☐ Metoprolol

☐ Milrinone   ☐ Nicardipine   ☐ Nitroglycerin   ☐ Nitroprusside   ☐ Norepinephrine   ☐ Phenylephrine   ☐ Vasopressin

ECLS Assessment

Arterial Blood Gas	Ventilator Settings
Closest to 24 hours after ECLS start, but no less than **18** hours and not more than **30** hours after ECLS start	

Date/Time: _____

FiO2 (at ABG draw): _____ (%)

Lactate: _____ (mmol/L)

pH: _____ Unknown? ☐

PaCO2: _____

PaO2: _____

HCO3: _____ Unknown? ☐

SaO2(%): _____

SpO2 (%): _____

No Ventilator in use: ☐

Date/Time: _____

Vent Type: _____ unknown/unavail? ☐

(Type: Other, Conventional, HFO, Other HFV, No Ventilator)

Rate(BPM) or Hz: _____

PIP/Ampl: _____

PEEP: _____

MAP: _____

Hand bagging: ☐ Y ☐ N ☐ Unknown

Hemodynamics **Closest to 24 hours** after ECLS start, but no less than **18** hours and not more than **30** hours after ECLS start

Date/Time: _____

Systolic BP: _____ unknown/unavail? ☐

Diastolic BP: _____ unknown/unavail? ☐

Mean BP: _____

SvO2: _____

Systolic PAP: _____

Diastolic PAP: _____

Mean PAP: _____

PCWP: _____

Cardiac Index: _____

Blood Pump Flow Rates (L/min)

Pump flow at 4 hours: _____ unknown/unavail? ☐ Pump flow at 24 hours: _____ unknown/unavail? ☐

ECLS Care

Unit Where Majority of ECLS Care Received

☐ Adult Medicine ICU ☐ Adult Surgical ICU ☐ Adult Cardiac ICU ☐ Adult Cardiovascular ICU ☐ ECLS ICU ☐ Emergency Dept. ☐ Burn ICU

☐ Mixed ICU ☐ Neonatal ICU ☐ Pediatric ICU ☐ Pediatric Cardiac ICU ☐ Operating Room/Cath Lab ➡ Initiated for procedure? Yes No

Nutrition and Mobility

Enteral Feeding Date/Time (started and continued for at least 2 days) _____

Level of Mobilization at day 7 of ECLS (>8 years)	Maximum Level Achieved During ECLS (>8 years)
☐ 0 Nothing (lying in bed)	☐ 0 Nothing (lying in bed)
☐ 1 Sitting in bed, exercises in bed	☐ 1 Sitting in bed, exercises in bed
☐ 2 Passively moved to chair (no standing)	☐ 2 Passively moved to chair (no standing)
☐ 3 Sitting over edge of bed	☐ 3 Sitting over edge of bed
☐ 4 Standing	☐ 4 Standing
☐ 5 Transferring bed to chair	☐ 5 Transferring bed to chair
☐ 6 Marching on spot (at bedside)	☐ 6 Marching on spot (at bedside)
☐ 7 Walking with assistance of 2 or more people	☐ 7 Walking with assistance of 2 or more people
☐ 8 Walking with assistance of 1 person	☐ 8 Walking with assistance of 1 person
☐ 9 Walking independently with a gail aid	☐ 9 Walking independently with a gail aid
☐ 10 Walking independently without a gait aid	☐ 10 Walking independently without a gait aid

Modes of ECLS

Initial Mode of ECLS

ECLS Start Date/Time: _____   ECLS/Mode Stop Date/Time: _____

ECLS mode: ☐ V-A (Venoarterial)   ☐ V-V (Venovenous)   ☐ V-VA (Veno - venoarterial)   ☐ A-VCO2R
☐ VV-ECO2R   ☐ VP (Venopulmonary)   ☐ Other

Add New Mode Conversion (this section to be used only for mode conversions – must enter a Stop Date/Time for the initial mode)

ECLS Mode Start Date/Time: _____   ECLS Mode Stop Date/Time: _____

Conversion mode: ☐ V-A (Venoarterial)   ☐ V-V (Venovenous)   ☐ V-VA (Veno venoarterial)   ☐ A-VCO2R
☐ VV-ECCO2R   ☐ VP (Venopulmonary)   ☐ Other
Is this a concurrent mode? Yes ☐ No ☐   **If yes, you must enter concurrent membrane lung and pump devices*.

Add New Mode Conversion (this section to be used only for mode conversions – must enter a Stop Date/Time for the initial mode)

ECLS Mode Start Date/Time: _____   ECLS Mode Stop Date/Time: _____

Conversion mode: ☐ V-A (Venoarterial)   ☐ V-V (Venovenous)   ☐ V-VA (Veno venoarterial)   ☐ A-VCO2R
☐ VV-ECCO2R   ☐ VP (Venopulmonary)   ☐ Other
Is this a concurrent mode? Yes ☐ No ☐   **If yes, you must enter concurrent membrane lung and pump devices*.

Add New Mode Conversion (this section to be used only for mode conversions – must enter a Stop Date/Time for the initial mode)

.
ECLS Mode Start Date/Time: _____   ECLS Mode Stop Date/Time: _____

Conversion mode: ☐ V-A (Venoarterial)   ☐ V-V (Venovenous)   ☐ V-VA (Veno venoarterial)   ☐ A-VCO2R
☐ VV-ECCO2R   ☐ VP (Venopulmonary)   ☐ Other
Is this a concurrent mode? Yes ☐ No ☐   **If yes, you must enter concurrent membrane lung and pump devices*.

Add New Mode Conversion (this section to be used only for mode conversions – must enter a Stop Date/Time for the initial mode)

ECLS Mode Start Date/Time: _____   ECLS Mode Stop Date/Time: _____

Conversion mode: ☐ V-A (Venoarterial)   ☐ V-V (Venovenous)   ☐ V-VA (Veno venoarterial)   ☐ A-VCO2R
☐ VV-ECCO2R   ☐ VP (Venopulmonary)   ☐ Other
Is this a concurrent mode? Yes ☐ No ☐   **If yes, you must enter concurrent membrane lung and pump devices*.

Add New Mode Conversion (this section to be used only for mode conversions – must enter a Stop Date/Time for the initial mode)

ECLS Mode Start Date/Time: _____   ECLS Mode Stop Date/Time: _____

Conversion mode: ☐ V-A (Venoarterial)   ☐ V-V (Venovenous)   ☐ V-VA (Veno venoarterial)   ☐ A-VCO2R
☐ VV-ECCO2R   ☐ VP (Venopulmonary)   ☐ Other
Is this a concurrent mode? Yes ☐ No ☐   **If yes, you must enter concurrent membrane lung and pump devices*.

. Duplicate this page as required for multiple mode changes

Cannulation

Cannulas placement for the ECLS Run

- *Please see ELSO Registry Data Definitions for specifics*
- *If a manufacturer or model is not listed, please contact RegistrySupport@ELSO.org*

	Cannula #1	Cannula #2	Cannula #3	Cannula #4	Cannula #5
	• *Note: Times will autopopulate with time on and off ECLS.* • *Only note new date/time for cannulas placed and removed during the run.* • *If the purpose of the cannula changes over the life of the cannula, enter the new purpose of the cannula and the date and time for change in purpose*				
Start Date/Time					
End Date/Time					
Manufacturer					
Cannula Model					
Size					
Pre-Existing (Y/N/Unk)					
Percutaneous (Y/N/Unk)					
Site					
Initial Purpose (Return,Drainage, Both, DPC)					
Replaced (Y/N)					
Reason?					
Ligated or repaired? * Required for non adult patients					

	Cannula #6	Cannula #7	Cannula #8	Cannula #9	Cannula #10
	• *Note: Times will autopopulate with time on and off ECLS.* • *Only note new date/time for cannulas placed and removed during the run.* • *If the purpose of the cannula changes over the life of the cannula, enter the new purpose of the cannula and the date and time for change in purpose*				
Start Date/Time					
End Date/Time					
Manufacturer					
Cannula Model					
Size					
Pre-Existing (Y/N/Unk)					
Percutaneous (Y/N/Unk)					
Site					
Initial Purpose (Return,Drainage, Both, DPC)					
Replaced (Y/N)					
Reason?					
Ligated or repaired? * Required for non adult patients					

Duplicate this page as required for multiple mode changes

Equipment

- *Please see ELSO Registry Data Definitions for specifics*
- *Specific reasons for membrane and pump replacement require a complication to be entered within 4 hours of the equipment exchange, UNLESS ECMO Stop Date/Time or Date/Time of Death is not entered within 4 hours.*

Membrane Lung	#1	#2	#3
Start Date/Time			
End Date/Time			
Manufacturer			
Device			
Concurrent Membrane (Y/N)			
Membrane Replaced (Y/N)			
Membrane Reason			
Blood Pump	#1	#2	#3
Start Date/Time			
End Date/Time			
Manufacturer			
Device			
Concurrent Pump (Y/N)			
Pump Replaced (Y/N)			
Pump Replaced Reason			
Console	#1	#2	#3
Start Date/Time			
End Date/Time			
Manufacturer			
Device			
Concurrent Console (Y/N)			
Console Replaced (Y/N)			
Console Replaced Reason			

Other Equipment	Manufacturer	Device
Hemofilter		
Temp Regulation Device		

Membrane Lung	#4	#5	#6
Start Date/Time			
End Date/Time			
Manufacturer			
Device			
Concurrent Membrane (Y/N)			
Membrane Replaced (Y/N)			
Membrane Reason			
Blood Pump	#4	#5	#6
Start Date/Time			
End Date/Time			
Manufacturer			
Device			

Concurrent Pump (Y/N)			
Pump Replaced (Y/N)			
Pump Replaced Reason			
Console	**#4**	**#5**	**#6**
Start Date/Time			
End Date/Time			
Manufacturer			
Device			
Concurrent Console (Y/N)			
Console Replaced (Y/N)			
Console Replaced Reason			

Duplicate this page as required for multiple changes

Primary Diagnosis: _____ (check box as primary)

Neonatal Respiratory Issue as The Primary Diagnosis Categories: Please refer to the ELSO Registry Definitions for specifics.

- *Select the primary diagnosis from the choices. If a general category is selected, you will be prompted to choose a specific subcategory or causative etiology. Some sub-categories may require additional branching characterization. List any additional diagnoses. There is no limit to the number of diagnoses you may enter.*

Secondary Diagnoses: (unlimited)	

CPT Procedure Codes (List all relevant procedures related to the patient even if preceding this admission)

Date/Time	Estimated? Y/N	Code/Procedure

ECLS Complications

- *Please see ELSO Registry Data Definitions for specifics regarding each complication definition.*
- *Enter multiple complications of the same type by 'add new complication' with new date/time for each occurrence.*
- *Complications that 'continue' for several days only need the first date of occurrence. (ie creatine >3.0) If the complication were to cease, and then re-occur, please enter the new date/time of the occurrence.*
- *A complication of Brain Death must be entered to allow a Date/Time of Death prior to ECMO Stop Date/Time.*
- *If a membrane lung failure or Blood Pump Failure is entered, an exchange should be entered in most circumstances.*

Is there any ECLS complication during this run? Yes ☐ No   **☐ Is complication verified? Yes ☐ No ☐**

Mechanical	Date/Time	Date/Time	Date/Time	Date/Time
Oxygenator failure				
Pump Failure				
Raceway Rupture				
Other Tubing Rupture				
Circuit Change				
Cannula Problems				
Temp Reg Device Malfunction				
Clots and Air Emboli				
Thombosis/Clots in Circuit Component				
Clots Hemofilter				
Air in Circuit				

Hemorrhage	Date/Time	Date/Time	Date/Time	Date/Time
GI Hemorrhage				
Peripheral Cannulation Site Bleeding				
Mediastinal Cannulation Site Bleeding				
Surgical Site Bleeding				

Neurological	Date/Time	Date/Time	Date/Time	Date/Time
Brain Death				
Seizures Clinically Determined				
Seizures Confirmed by EEG				
CNS Diffuse Ischemia(CT/MRI)				
CNS Infarction(US or CT or MRI)				
Intra/extra Parenchymal CNS Hemorrhage(US or CT or MRI)				
Intraventricular CNS Hemorrhage				
Neurosurgical intervention performed(US or CT or MRI)				

ECLS Complications (cont'd)

Renal	Date/Time	Date/Time	Date/Time	Date/Time
Creatinine 1.5 – 3.0				
Creatinine > 3.0				
Renal Replacement Therapy Required				

Cardiovascular	Date/Time	Date/Time	Date/Time	Date/Time
CPR/Chemical Code Required				
Cardiac Arrhythmia				
Tamponade (blood)				
Tamponade (not blood)				

Pulmonary	Date/Time	Date/Time	Date/Time	Date/Time
Pneumothorax requiring treatment				
Pulmonary Hemorrhage				

Metabolic	Date/Time	Date/Time	Date/Time	Date/Time
Hyperbilirubinemia				
Moderate Hemolysis				
Severe Hemolysis				

Patient Limb	Date/Time	Date/Time	Date/Time	Date/Time
Compartment Syndrome				
Fasciotomy				
Amputation				
Ischemia				

Infections (pre and those occurring on ECMO)

Does this run have any infections? Yes ☐ No

Date/Time/Estimated?	Culture Site	Organism Type	Organism

- Sites: Blood, Bone, Cerebrospinal fluid, Peritoneal fluid, Pleural fluid, Respiratory tract, Skin/soft tissue, Stool, Urine, Wound – surgical, Wound – traumatic, Other, Unknown
- Type: Unknown, Gram+ Bacteria, Gram– Bacteria, Mycobacterium, Fungus (yeast and mold), Viruses and Prions, Protozoa
- Selection of Type will populate specific associated organisms.
- Organisms are listed in the Data Definiitons. If an organism is not listed, please contact RegistrySupport@elso.org

Duplicate this page as required for multiple changes

Outcomes

Discontinuation Reason (Why the patient was separated from ECLS)

- *This may be left blank if patient was transferred on ECLS*

☐ Expected recovery   ☐ Pumpless Lung Assist (Pa to LA)

☐ Poor prognosis followed by death   ☐ Poor prognosis followed by unexpected survival

☐ Resource limitation   ☐ Heart Tx

☐ ECLS complication   ☐ Lung Tx

☐ VAD   ☐ Heart/Lung Tx

☐ Unknown   ☐ Complication

Cannulation Repair

☐ None   ☐ Common Carotid Artery

☐ Internal Jugular Vein   ☐ Carotid and Jugular

☐ Other

Extubated

☐ Endotracheally (oral and nasal) extubated   ☐ N/A still intubated at time of death

☐ N/A Tracheostomy (including Tracheostomy decannulation)   ☐ N/A other

☐ N/A transferred intubated

Oral Endotracheal Tube Removed Date/Time: _____

ICU Discharge Date/Time: _____

Form completed by: _____ *Completed date is automatically added when you submit the run.*

- Select Validate Data – to assure mandatory fields complete, dates are correct.

- Select Submit and Lock – to finalize the record and submit to ELSO.

- Selection of Edit Run after Submission will allow the user to change data, but the form must be re-validated and re-submitted.

- Deletion of a record must be done by ELSO Staff – please email RegistrySupport@elso.org

- Any questions and concerns may be directed to RegistrySupport@elso.org