

# Extracorporeal Life Support Organization

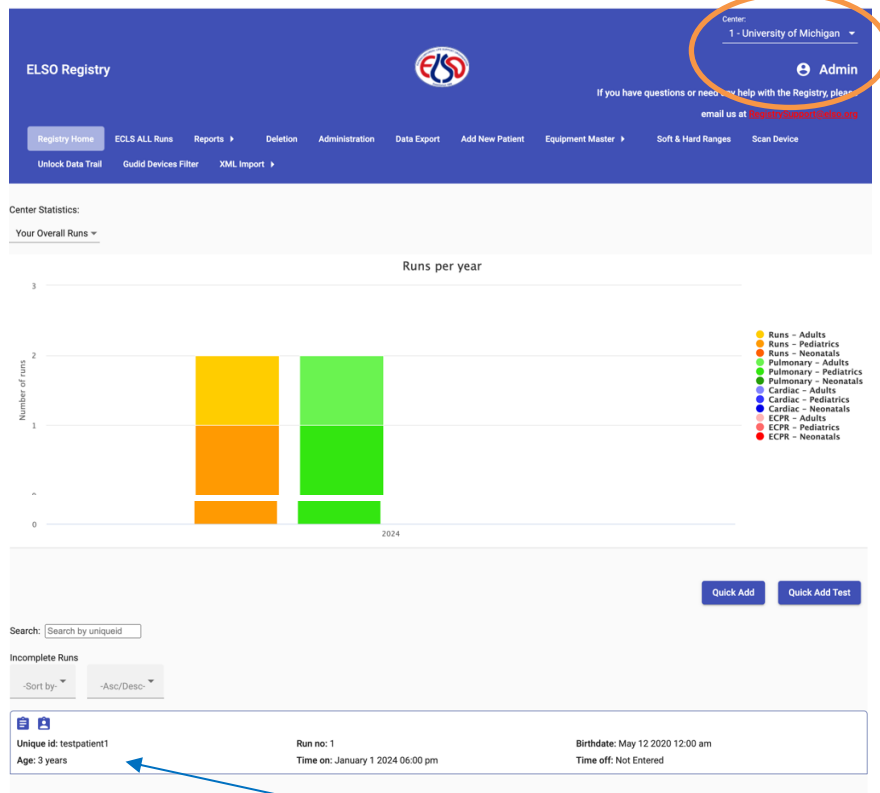
## ELSO Data Registry Instructions

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## I. Accessing the Registry

- You must first be assigned access data by your ELSO Website Administrator. Please refer to the Manage tab on [www.else.org](http://www.else.org) for further information.
- All Data Registry users must pass the Data Registry Exam first in order to enter data.
- Open [www.else.org](http://www.else.org) and sign in with your user name and password. This must be assigned to you by your ELSO Administrator.
- Select the Registry Tab, and then Data Entry. Enter your user name and password.
- The Center specific home page will load.



The Center name will appear in the upper right hand corner. Select the drop down to change the correct center to enter data.

Select 'Admin' (the current user name) to change settings, update your center equipment shortcut list or to log out.

Select any tab to find every entered registry patients, reports that are available, delete a record, administration to select the date/time and unit format, or export data.

The Equipment Master tab allows downloads of the ELSO Equipment lists available to the Registry. To add new equipment, please email [registrysupport@else.org](mailto:registrysupport@else.org)

The bottom of the home page lists all incomplete runs. Click on an icon to update the run or patient information.

## II. Starting a New Patient Form

*Note: Please refer to the ELSO Registry Data Definitions for specific details for the data fields to be entered.*

- After logging in, select “Add New Patient” or “Quick Add” from the home page
- The unique ID is specific to your center.
- The following screen will load. All ‘Red’ data must be completed to save entry.

The screenshot displays the 'Add Patient' form, which is divided into two main sections: 'Patient information' and 'First run information'. Both sections contain several required fields, indicated by red text and error messages.

**Patient information section:**

- Uniquelid:** A text input field for 'Unique Id'. Below it, a red error message states 'This field is required!'.
- Birthdate:** A date-time picker field. Below it, a red error message states 'This field is required!'.
- Sex:** A dropdown menu with 'Please select' as the current selection. Below it, a red error message states 'This field is required!'.
- Race:** A list of radio button options: 'Unknown', 'Asian', 'Black', and 'Hispanic'. Each option has an unchecked checkbox to its right.

**First run information section:**

- Time on:** A date-time picker field. Below it, a red error message states 'This field is required!'.
- Run no:** A text input field containing the number '1'.
- Support type:** A dropdown menu with 'Please select' as the current selection. Below it, a red error message states 'This field is required!'.
- Mode:** A dropdown menu with 'Please select' as the current selection. Below it, a red error message states 'This field is required!'.

At the bottom of the form, there are two buttons: 'Cancel' (in blue) and 'Save' (in grey).

Enter all required data.

Once you complete this section, and click ‘Save’, it will save the identifier and will be listed on your home page as an incomplete record.

‘Cancel’ will return to the home page.

### III. Frequently asked questions

#### How do I find my newly added patient to enter data?



- On the home page, scroll to the bottom. All incomplete runs are listed.
- Search by unique ID, or scroll to the desired patient record.


Search:

Quick Add Quick Add Test

Incomplete Runs

-Sort by- -Asc/Desc-

 	Unique id: testpatient1 Age: 3 years	Run no: 1 Time on: January 1 2024 06:00 pm	Birthdate: May 12 2020 12:00 am Time off: Not Entered
---	---	---	--

Patient Information 

Uniqueid: testpatient1 Birthdate: May 12 2020 12:00 am

Sex: Male Race:

Unknown ☐

Asian ☐

Black ☐

Select the patient icon to update the information for the patient.

This screen will load. Select the edit icon to change or enter new information.

#### How do I edit the run data? How do I edit a submitted patient record?



- On the home page, scroll to the bottom. All incomplete runs are listed.
- If the patient has been submitted, select on the top blue bar “ECLS All Runs”.
- Search by unique ID, or scroll to the desired patient record.

Search:

Quick Add Quick Add Test

Incomplete Runs

-Sort by- -Asc/Desc-

 	Unique id: testpatient1 Age: 3 years	Run no: 1 Time on: January 1 2024 06:00 pm	Birthdate: May 12 2020 12:00 am Time off: Not Entered
---	---	---	--



Run


Run no: 1 Patient: testpatient1

Birthdate: May 12 2020 12:00 am Age: 3 years

Support type: Pulmonary ECLS Start Time: January 1 2024 06:00 pm

To edit Start or Stop time, click on the Modes & Cannulations tab above.

 Patient Information  Submitted: No

Run Info 

Run no: 1 Support type: Pulmonary

Admission height (cm): Admission weight (kg):

Select the run icon to update the information for the run.

This will ‘unlock’ the record for any edits.

Re-submit any previously submitted records that have been edited.

This screen will load. Select the edit icon to change or enter new information.



## How do I enter a second or additional run?

- Additional runs are entered for the same unique ID for the life of the patient.
- Please see the data definitions to determine if the requirement is met for an additional run.
- On the home page, scroll to the bottom. All incomplete runs are listed.
- If the patient has been submitted, select on the top blue bar “ECLS All Runs”.
- Search by unique ID, or scroll to the desired patient record.


Search:

Incomplete Runs

<Sort by> <-Asc/Desc>

 Unique id: 0012024001 Age: 44 years	Run no: 1 Time on: January 8 2024 05:00 pm	Birthdate: April 20 1979 12:00 am Time off: January 10 2024 08:00 am
 Unique id: testpatient1 Age: 3 years	Run no: 1 Time on: January 1 2024 06:00 pm	Birthdate: May 12 2020 12:00 am Time off: Not Entered

Runs

Run No	Time On	Time Off	Support Type	Days EC
 1	January 1 2024 06:00 pm		Pulmonary	

Items per page: 5 1 – 1 of 1 < >

Back

Add new run

Select the run icon and scroll to the bottom.

You may click ‘Add New Run’ to add an additional run for the same patient.

Multiple runs (as added) will list for the same patient. If necessary, select the appropriate run to edit.

You may click the run icon to edit the run details.

## How do I find the data I want to edit or enter?

- Once the patient record is selected and the run icon has been clicked, the upper blue bar has all individual tabs that may be selected to move around the registry form.

ELSO Registry

Center: 1 - University of Michigan

Admin

If you have questions or need any help with the Registry, please email us at [registry@elso.org](mailto:registry@elso.org)

Registry Home ECLS ALL Runs Reports Administration Data Export Add new ECLS Equipment Master Soft & Hard Ranges Scan Device

Unlabeled Data Filter Guided Devices Filter XML Import

Run Info Pre ECLS Assessment Pre ECLS Support ECLS Assessment Modes Cannulations Equipment Diagnoses Procedures Complications Infections

Outcome Addenda Submission

Search: 1 ECLS

Run Info

Run no: 1 Support type: Pulmonary

Admission height (cm): Admission weight (kg):

Intubation: Intubation date: Not Entered

Hospital Admit Date: Not Entered Patient transported to your center?:

Pre-ECLS Cardiac Arrest: No Bridge to Transplant: No

Trauma:

Next

Select the tab on the blue bar to enter the data.

You may also enter the run (click the edit icon) and page through by selecting 'next'.

## My ECLS patient was transported in on ECMO – what do I do?

- Select the record to enter the transported.
- Select Run Info from blue bar.
- Note: Date/Time on ECMO is the same as Date/Time Admitted to your center.
- Do not enter any data on the Pre-ECLS tab.

Run Info

Run no. 1

Support type: Pulmonary

Admission height (cm):

Admission weight (kg):

Intubation:

Intubation date: Not Entered

Hospital Admit Date: Not Entered

Patient transported to your center?:

Pre-ECLS Cardiac Arrest: No

Bridge to Transplant: No

Trauma:

Click 'edit' to enter the information.

Admission Date:

Date time

Pre-ECLS Cardiac Arrest:

No

Patient transported to your center?

Please select

Transported on ECMO

Transported not on ECMO

Not transported

Unknown

Select if the patient was transported on ECMO.

Because this is a transfer, the ECLS Start time should be entered as the time your center assumed care for this patient

Transfer:

☐ From an ELSO Center

☐ From a non ELSO Center

☐ Cannulated with Mobile ECMO

Pre-ECLS Cardiac Arrest:

No

This field is required!

Additional fields will populate – Note that the time on ECLS should be entered as the date/time the patient was admitted or care was assumed by your center.

Transfer:

☒ From an ELSO Center

☐ From a non ELSO Center

☐ Cannulated with Mobile ECMO

Bridge to Transplant:

No

Search center:

search center

This field is required!

Select where or how the patient was transported on ECMO.

If transported from an ELSO center – Search to enter the center name. You may also enter the center number.

Because this is a transfer, the ECLS Start time should be entered as the time your center assumed care for this patient

Transfer:

☐ From an ELSO Center

☒ From a non ELSO Center

☐ Cannulated with Mobile ECMO

Bridge to Transplant:

No

Non ELSO center:

Local Community Hospital

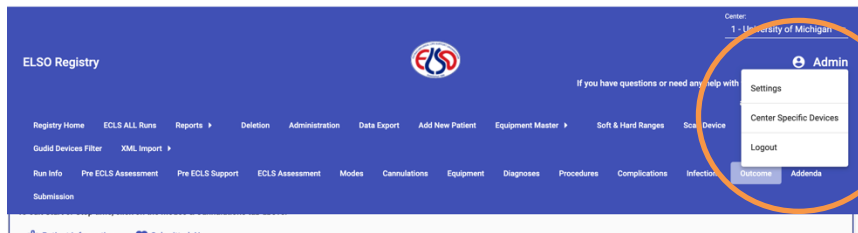
If transported from a non ELSO Center, enter the name of the hospital here.

I cannot find in the drop down the cannula or other circuit component that was used?

How do I add a new disposable component to my center list?

How do I delete an obsolete piece of equipment?

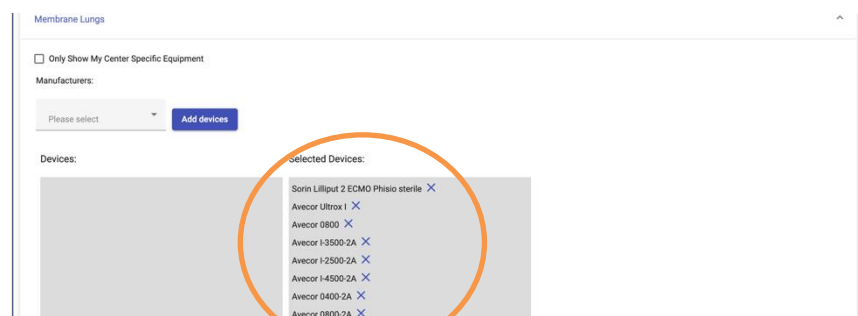
- Select your user name on the blue bar.



Select Center Specific Devices

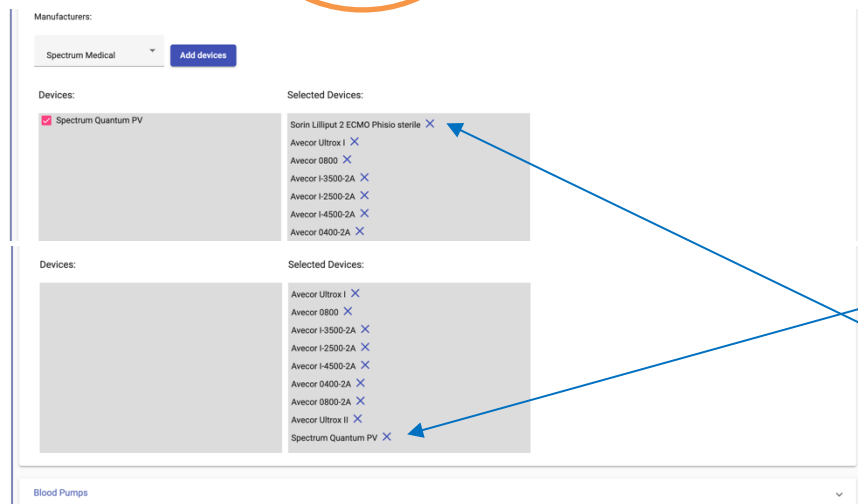


Select the category of devices that you wish to add or delete a device.



Your center specific devices will be listed here.

Add the manufacturer for the device. This will populate the choices.



Select the specific device to add to your list by clicking the box next to it. Then select 'add device'.

It will now be listed under your devices.

You may also delete a device by clicking on 'x'.



## How do I change the Mode of ECMO?

- Select the record to enter the new mode.
- Select Modes from blue bar.
- Initial mode information will present.

**Initial mode**

**Initial Mode Information**

Start Time: January 1 2024 06:00 pm

End Time: January 4 2024 12:00 am

Note: If this Run only has one mode, the Start time will be the time on and the Stop Time will be the Time Off ECLS. If this run has multiple modes, the initial mode start time is the Time On and the final mode Stop Time is the Time Off ECLS.

**Mode**

ECLS Mode: VA

**Conversion 1 Information**

Start Time: January 4 2024 12:01 am

End Time: Date time

Note: If this Run only has one mode, the Start time will be the time on and the Stop Time will be the Time Off ECLS. If this run has multiple modes, the initial mode start time is the Time On and the final mode Stop Time is the Time Off ECLS.

**Mode**

ECLS Mode: VVECC02R

Add new conversion

In order to add conversion, set EndTime for previous mode and fix form errors

This run had 2 concurrent modes

Back Next Cancel Save

Click the edit icon to change the entered data.

Initial mode previously entered will present.

Enter the end time of the initial mode.

Enter the conversion time for the second mode one minute later.

Select the second mode.

To add a third mode change (add new conversion), enter the end time for the second mode and then the start time for the third mode.

## How do I enter two concurrent modes of ECMO?

- This configuration refers to the use of two separate ECMO circuits and cannulation strategies.
- Select the record to enter the concurrent mode.
- Select Modes from the blue bar.

**Initial mode**

**Initial Mode Information**

**Start Time:** January 1 2024 06:00 pm

**End Time:** January 4 2024 12:00 am

Note: If this Run only has one mode, the Start time will be the time on and the Stop Time will be the Time Off ECLS. If this run has multiple modes, the initial mode start time is the Time On and the final mode Stop Time is the Time Off ECLS.

**Mode**

**ECLS Mode:** VA

**Second concurrent mode**

**Initial Mode Information**

**Start Time:** January 1 2024 06:00 pm

**End Time:** Date time

Note: If this Run only has one mode, the Start time will be the time on and the Stop Time will be the Time Off ECLS. If this run has multiple modes, the initial mode start time is the Time On and the final mode Stop Time is the Time Off ECLS.

**Mode**

**ECLS Mode:** VA

**Buttons:** Back, Next, Cancel, Save

**Message:** This run had 2 concurrent modes

Click the edit icon to change the entered data.

Initial mode previously entered will present.

Select the button.

The screen will load allowing the 'second concurrent mode'.

Enter the initial mode of the second concurrent mode.

This also allows you to change the mode of the concurrent mode.

## How do I change the cannulation strategies for ECMO?

### How do I change/replace or remove a cannula?

- Changing a mode usually requires a cannulation strategy or a cannula change.
- Select the record to enter the cannula change.
- Select Cannulations from the blue bar.

**Cannulations**

[Add New Cannulation](#)

Percutaneous:	Pre-existing: Yes	Cannula: DLP 10 Fr (blue hub)
Site: Aorta	Start Time: January 1 2024 06:00 pm	End Time: Not Entered
Replacement Reason: Hemolysis		
Purpose: Both drainage and return		
Start Time: January 1 2024 06:00 pm	End Time: January 25 2024 08:58 am	
Purpose: Distal perfusion catheter(DPC)		
Start Time: January 25 2024 08:58 am	End Time: February 5 2024 03:00 am	

**Replace this cannula**

Percutaneous: No	Pre-existing: No	Cannula: Arrow Sheath 9 Fr
Site: Left atrium	Start Time: January 4 2024 12:00 am	End Time: January 4 2024 12:00 am
Purpose: Return		
Start Time: January 4 2024 12:00 am	End Time: January 4 2024 12:00 am	

Items per page: 5 1 - 1 of 1

All cannulations (cannulas) will be listed.

Click the edit icon to change the entered data.

Select 'Add New Cannulation' to add a cannula.

**Cannulation**

Percutaneous: No Preexisting: No

Manufacturer: Medtronic Cardiopulmonary/DLP Cannula: Biomedicus NextGen Arterial 8 Fr

Center Specific Device: Please select Site: Aorta

Drainage: No Replacement Reason: Please select

☐ The start time and end time of this cannula is the same as the time on and time off on this run

Start Time: January 1 2024 06:00 pm End Time: Date time

Initial Purpose: Return

[Change cannulation purpose](#)

[Back](#) [Next](#) [Cancel](#) [Save](#) [Add new](#)

All cannulations (cannulas) will be listed.

Click the edit icon to change the entered data.

Select 'Replace this Cannula' to note a removal of a cannula that was replaced.

The replacement reason is required.

Enter the end time of the removed cannula.

You may also select 'Change Cannulation purpose' for a cannula remaining, but is reconfigured.

Select 'Add New' to add a new cannula.

## How do I change a disposable circuit component?

- Please see data definitions for indications to change components.
- Specific component changes require a complication to be entered for the same date/time.
- Only disposable components changes are entered.
- Select the record to enter the component change.
- Select Equipment from the blue bar.

Equipment

Membrane Lung

Device

Initial device

Device: Nautilus ECMO Oxygenator Balance Biosurface

Equipment Start Time: January 1 2024 06:00 pm

Equipment End Time: Not Entered

Device

device

Device: Sorin Lilliput 2 ECMO Phiso sterile

Equipment Start Time: January 23 2024 02:59 pm

Equipment End Time: Not Entered

Blood Pump

Device

Initial device

Device: Hospital RP06 Roller

Equipment Start Time: January 1 2024 06:00 pm

Equipment End Time: Not Entered

Device

device

Device: Hospital RP06 Roller

Equipment Start Time: January 23 2024 03:00 pm

Equipment End Time: Not Entered

Hemofilter

Manufacturer: Abiomed

Device: Abiomed Breethe

Temperature Regulation

Manufacturer: Abiomed

Device: Abiomed Breethe

Back Next

Equipment End Time: Not Entered

Edit membrane lungs

Membrane Lungs

Device

Initial Device

Delete device

Manufacturer: MC3 (distributed by Medtronic)

Device: Nautilus ECMO Oxygenator Balance Biosurface

Center Specific Device: Please select

Start Time: January 1 2024 06:00 pm

End Time:

Replace This Membrane Lung

End Time: February 9 2024 11:01 am

Device Replacement Reason: Please select

Structural integrity

Decreased efficiency of gas exchange

Acute obstruction to blood flow

Increasing resistance to blood flow

Thrombosis / coagulopathy

This field is required!

Start Time:

Replace This Membrane Lung

Click the edit icon to change the entered data.

All devices entered will be listed.

Select 'Edit Membrane Lung' (or other device) to replace or delete.

Enter the end time of the replaced lung.

Select 'Replace this Membrane Lung'.

The replacement reason is required.

Enter all data as required.

## How do I add a concurrent circuit component?

- Select the record to enter the component change.
- Select Equipment from the blue bar.

Equipment

Membrane Lung

Device

Initial device

Device: Nautilus ECMO Oxygenator Balance Biosurface

Equipment Start Time: January 1 2024 06:00 pm

Equipment End Time: Not Entered

Device

Device

Device: Sorin Lilliput 2 ECMO Phisio sterile

Equipment Start Time: January 23 2024 02:59 pm

Equipment End Time: Not Entered

This Run had 2 concurrent Membrane Lungs

Cancel Save

Click the edit icon to change the entered data.

All devices entered will be listed.

Scroll to the bottom and select 'This Run had 2 concurrent Membrane Lungs' (or other device).

Enter all data as required.

## How do I add diagnoses? What if the diagnosis is not listed?

- Select the record to enter the diagnosis.
- Select Diagnoses from the blue bar.

Diagnoses

Add new diagnosis

Back Next

Guided Devices Filter XML Import

Run Info Pre ECLS Assessment Pre ECLS Support ECLS

Submission

Run

Run no: 1

Birthdate: May 12 2020 12:00 am

Support type: Pulmonary

To edit Start or Stop time, click on the Modes & Cannulations tab above.

Patient Information Submitted: No

Diagnoses

Add new diagnosis

Diagnoses

Primary Diagnosis:

J42

J42 - Unspecified chronic bronchitis

Save Cancel

Set primary

Primary Diagnosis: No

ICD-10 CM Code: J42

ICD-10 Diagnosis: Unspecified chronic bronchitis

Primary

Primary Diagnosis: Yes

ICD-10 CM Code: A37.00

ICD-10 Diagnosis: Whooping cough due to Bordetella pertussis without pneumonia

Items per page: 5 1 - 2 of 2

Back Next

Select 'Add new diagnosis'.

A pop up will allow entering of the ICD-10 code as known or typing the diagnosis will auto populate the code.

Select one diagnosis as the primary one for ECLS.

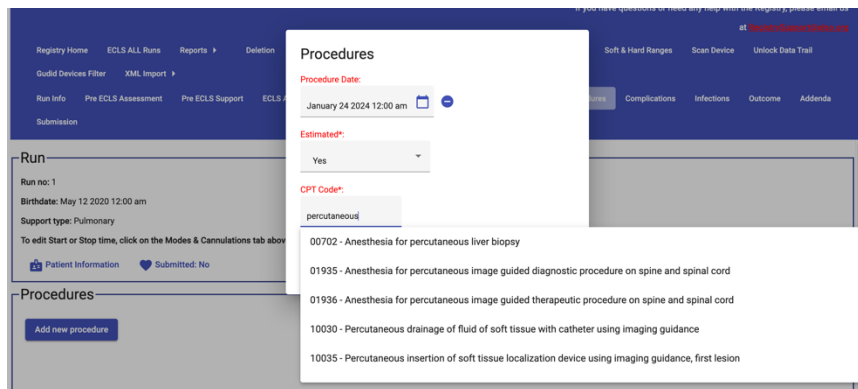
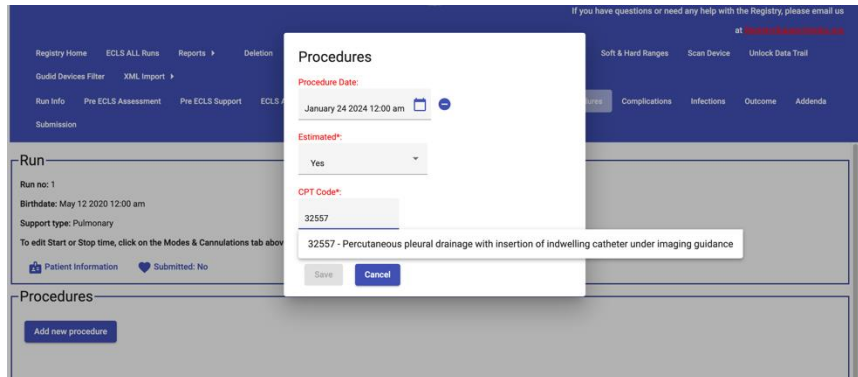
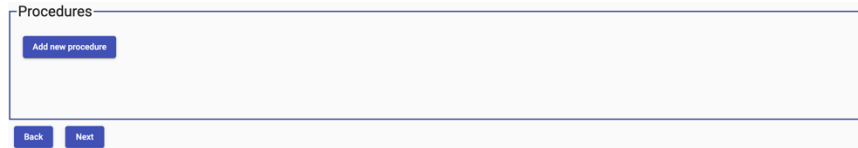
Continue to add diagnoses as required.

All diagnoses will be listed and may be edited or deleted.

Any ICD-10 not available, please email [registrysupport@elso.org](mailto:registrysupport@elso.org)

## How do I add procedures? What if the procedure is not listed?

- Select the record to enter the procedures.
- Select Procedures from the blue bar.
- Enter procedures that are pertinent to the ECLS run. Standard ICU procedures such as arterial line placement or chest radiographs are not necessary to enter.



Select 'Add new procedure'.

A pop up will allow entering of the CPT code as known or typing the procedure will auto populate the code.

Enter the procedure date/time and whether it is estimated or not.

Continue to add procedures as required.

All procedures will be listed and may be edited or deleted.

Using an online search engine may assist in finding CPT codes.

## How do I add a complication? How do I edit a complication?

- Select the record to enter the complication.
- Select Complications from the blue bar.
- Any mechanical complication that requires a replacement disposable device must have that device replaced under Equipment.

Complications

Does this run have any complications? ☒ Yes ☐ No

[Add new complication](#)

	Time: January 2 2024 12:00 am	Estimated: Yes	Complication: 711 - Infectious: WBC < 1,500
	Time: January 1 2024 12:00 am	Estimated: No	Complication: 103 - Mechanical: Other tubing rupture

Items per page: 5 1 - 2 of 2 < >

Complication

Complication Time:  Estimated: ☐

Date time

This field is required!

Complication code is required

Mechanical Complication Codes:

Hemorrhagic Complication Codes:

Neurologic Complication Codes:

Mechanical Complication Codes:

- ☒ Mechanical: Oxygenator failure
- ☐ Mechanical: Raceway rupture
- ☐ Mechanical: Other tubing rupture
- ☐ Mechanical: Pump failure
- ☐ Mechanical: Temperature Regulation Device Malfunction
- ☐ Mechanical: Clots: hemofilter
- ☐ Mechanical: Air in circuit
- ☐ Mechanical: Cannula problems
- ☐ Mechanical: Circuit change

Complications

Does this run have any complications? ☒ Yes ☐ No

[Add new complication](#)

	Time: January 17 2024 04:04 am	Estimated: No	Complication: 101 - Mechanical: Oxygenator failure
	Time: January 2 2024 12:00 am	Estimated: Yes	Complication: 711 - Infectious: WBC < 1,500
	Time: January 1 2024 12:00 am	Estimated: No	Complication: 103 - Mechanical: Other tubing rupture

Answer does this run have any complications?

Select 'Add new complication'.

Enter the complication date/time and click the whether it is estimated.

Categories of complications will be listed. Select the category drop down

Select the specific complication.

Continue to add new complications as required for the run.

All entered complications will be listed. These may be edited or deleted.

## How do I enter the outcome for the patient run?

- Select the record to enter the outcome.
- Select Outcome from the blue bar.

Outcome

Discontinuation:

Extubated:

Oral endotracheal tube removal: Not Entered

Cannula site repair:

Discharged alive: No

ICU discharge date: Not Entered

Discharge date: Not Entered

Discharge location:

Death date: Not Entered

Back Next

Select edit to enter or change data.

## My patient was discharged to hospice, how do I enter that?

- Select the record to enter the outcome.
- Select Outcome from the blue bar.

Outcome

Discontinuation:

Extubated:

Please select

Unknown

Expected Recovery

Poor Prognosis Followed by Death

Resource Limitation

VAD

NO

Please select

Home

Other, Unknown

Transferred to another hospital

Transfer to LTAC or Rehab

Transfer to hospice

Date time

Discharged alive:

No

Discharge date:

Date time

Death date:

Date time

Select edit to enter or change data.

Select the reason for discontinuation from ECLS.

Select 'Transfer to hospice'.

Enter the date of discharge and follow with the eventual date of death.



## How do I add an Addenda? How do I edit an Addenda?

- Please see the data definitions for each individual addenda.
- Select the record to enter the addenda.
- Select Addenda from the blue bar.

Addenda

+ Add Cardiac + Add ECPR + Add TRAUMA + Add ASCEND

👁️ 🗑️	ASCEND
👁️ 🗑️	ECPR
👁️ 🗑️	TRAUMA
👁️ 🗑️	Cardiac

Back Next

Select 'Add' for the specific addenda.

All addenda previously entered will be listed. These may be edited by selecting the view icon or deleted.

## How do I validate the data? How do submit the record?

- Select the record to validate and submit.
- Select Submit from the blue bar.

The top screenshot shows the 'Submission' header, 'Electronic Signature' field, and 'Validate data' and 'Submit and lock' buttons. Below these are 'Next', 'Cancel', and 'Save' buttons.

The bottom screenshot shows the same interface but with an 'Errors' section populated with red text messages. A blue arrow points from the 'Submit and lock' button in the bottom screenshot to the text box on the right.

Submission

Electronic Signature:  
Electronic Signature

Validate data Submit and lock

Next Cancel Save

Submission

Electronic Signature:  
Peter Rycus

Validate data Submit and lock

Errors:  
Run Info  
MIS-C is required  
Complications  
Complication 103 time cannot be more than 4 hours prior to ECLS time on 1/1/2024 17:00.  
Because this run has an oxygenator failure complication, you must include the new membrane lung on the equipment tab if ECMO support was continued or the death date/time must be within 4 hours of the complication or the time off must be within 4 hours of the complication.  
Outcome  
Discharge date must have some value.  
Death date is required when discharged alive is set to no.

Enter the electronic signature first.

Select 'Validate data'. Data must be validated before submission.

Any errors will populate. All errors must be addressed before submission is allowed.

Once errors are cleared, select 'Submit and lock'.