ToxIC Data Collection Form Version 2.0
EXTRACORPOREAL THERAPY (ECT) SUBREGISTRY (Effective Data 1/1/2017)

ToxIC Member Site: ______________________ Institution: ______________________________

Patient Code (Unique Case Code per Site): ____________________

**Inclusion Criteria:**
Please only enter information on any patient with ECT episodes performed during the time when the patient is still suffering the effects of poisoning.

**Exclusion Criteria:**
Exclude patients with:
- ECT performed after the acute clinical effects of poisoning have resolved (e.g., a patient who requires dialysis due to acute kidney injury from an overdose causing hypotension, but dialysis started after hypotension has resolved).
- ECT performed in patients thought not to have clinical symptoms related to poisoning (e.g., consults seen by toxicologists who are later thought to have a non-toxicological condition).
- ECMO or similar cardiovascular support as the only ECT therapy performed (i.e., ECMO performed without dialysis).

**Data Collection:** Email questions related to this sub registry to Principal Investigator Joshua King, M.D., at joshking@virginia.edu.

**Patient Factors**

Patient’s presenting weight (kg) ________
Patient’s height (inches) ________________

Please indicate availability and values for the following labs as indicated:

Creatinine: □ Known □ Not Available □ Not Performed
If known - Enter values (mg/dL)
    On admission __________ Peak __________ Baseline __________ □ Baseline Not Available

[Definition: Baseline Creatinine = lowest value in prior year]:

Serum bicarbonate: □ Known □ Not Available □ Not Performed
If known - Enter values (mEq/L or mmol/L)
    On admission __________ Nadir (Lowest) ________________

pH: □ Known □ Not Available □ Not Performed
If known - Enter values
    Initial __________ Nadir (Lowest) ________________

Initial anion gap (using the formula AG = Na – Cl – HCO3 with no accounting for albumin):
    □ Known □ Not Available □ Not Performed
If known - Enter value (mEq/L) ________________

Peak anion gap: □ Known □ Not Available □ Not Performed
If known - Enter value (mEq/L) ________________

Initial osmolal gap (no ethanol correction): □ Known □ Not Available □ Not Performed
If known - Enter value (mOsm/kg) ________________

Peak osmolal gap (no ethanol correction): □ Known □ Not Available □ Not Performed
If known - Enter value (mOsm/kg) ________________
Past Medical & Renal History

Does the patient have any of the following (check all that apply):
- ☐ None
- ☐ Coronary artery disease
- ☐ Chronic pulmonary disease (e.g., COPD, OSA, pulmonary fibrosis)
- ☐ Congestive heart failure
- ☐ Hypertension
- ☐ Diabetes
- ☐ Existing kidney problem other than CKD/ESRD (e.g., polycystic kidney disease)
  Please specify: __________________________
- ☐ Malignancy:
  Please specify type: __________________________
- ☐ Chronic anticoagulation for any disease
- ☐ Chronic liver disease
- ☐ Psychiatric disease (depression, bipolar disorder, etc.)

Does the patient have ESRD? ☐ Yes ☐ No ☐ Unknown/Not Applicable

  [Definition: Patients on maintenance dialysis GFR <15 on maintenance]
  If yes, cause(s) of ESRD (if known)________________________  ☐ Unknown
  If yes, indicate type of maintenance dialysis?
  ☐ HD  ☐ PD  ☐ Home or Nocturnal Hemodialysis

Does the patient have CKD stage III or higher?

  [Definition: Baseline GFR <60]:
  ☐ Yes  ☐ No  ☐ Unknown/Not Applicable
  If yes, what are the cause(s) of CKD)?________________________, or ☐ Unknown

Does the patient currently have an organ transplant? ☐ Yes ☐ No
  If yes, ☐ Kidney  ☐ Liver  ☐ Heart  ☐ Lung  ☐ Pancreas
  ☐ Other (including combination transplant)____________________

Extent of Acute Renal Injury

Did the patient have acute kidney injury prior to ECT? [Definition: Either a creatinine rise of ≥ 0.3 mg/dL above baseline or ≥150% above baseline; or, oliguria with urine output <400 mL/day or <0.5 mL/kg/hour for more than 6 hours?] ☐ Yes ☐ No ☐ Unknown
  If yes, was AKI due to poisoning? ☐ Yes ☐ No ☐ Unknown

Prior to starting ECT:
- Was the patient oliguric (over 6 hours)? [Definition: Approximately < 0.5 mL/kg/body weight urine output] ☐ Yes ☐ No ☐ Unknown

- Was the patient anuric (over 24 hours)? [Definition: ≤50 mL of urine in 24 hours] ☐ Yes ☐ No ☐ Unknown

Was this patient transferred from another hospital?
- ☐ Yes  ☐ No  ☐ Unknown
  If yes, why was the patient transferred (check all that apply):
  - ☐ Higher level of care  ☐ Lack of bed availability  ☐ Unable to perform extracorporeal therapy
  - ☐ Other reason: __________________________  ☐ Unknown

ACMT ToxIC Extracorporeal SubRegistry Form V2.0 Effective 1/1/2017
For acute toxic exposures, approximately how much time (in hours) elapsed between exposure and initial hospital presentation?

<table>
<thead>
<tr>
<th>Time Period (hrs)</th>
<th>Unknown</th>
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</table>

Approximately how long (in hours) after initial presentation did the patient receive their initial ECT?

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<tr>
<th>Time Period (hrs)</th>
<th>Unknown</th>
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Was the patient hypotensive or hemodynamically unstable at the start of ECT? □ Yes □ No □ Unknown

**Information on ECT Used**

Did the patient have HD or SLED: □ Yes □ No □ Unknown

If yes, please fill out session information below for up to the first 5 sessions.

**Dialysis Drug Removal Information**

How many extracorporeal therapy sessions for drug/toxin removal? □1 □2 □3 □4 □5 □>5

**Session 1**

Type (check all that apply): □ HD □ SLED □ Hemoperfusion □ Albumin
Location of dialysis catheter: □ Internal jugular or subclavian □ Femoral □ Fistula or Graft □ Other
Type of filter or cartridge (e.g., Fresenius 160, Revaclear MAX, etc.): __________ □ Unknown
Duration: ____ (hours)
Blood flow rate: ____ (mL/min)
Dialysate flow rate: ____ (mL/min)

**Session 2**

Type (check all that apply): □ HD □ SLED □ Hemoperfusion □ Albumin
Location of dialysis catheter: □ Internal jugular or subclavian □ Femoral □ Fistula or Graft □ Other
Type of filter or cartridge (e.g., Fresenius 160, Revaclear MAX, etc.): __________ □ Unknown
Duration: ____ (hours)
Blood flow rate: ____ (mL/min)
Dialysate flow rate: ____ (mL/min)

**Session 3**

Type (check all that apply): □ HD □ SLED □ Hemoperfusion □ Albumin
Location of dialysis catheter: □ Internal jugular or subclavian □ Femoral □ Fistula or Graft □ Other
Type of filter or cartridge (e.g., Fresenius 160, Revaclear MAX, etc.): __________ □ Unknown
Duration: ____ (hours)
Blood flow rate: ____ (mL/min)
Dialysate flow rate: ____ (mL/min)

**Session 4**

Type (check all that apply): □ HD □ SLED □ Hemoperfusion □ Albumin
Location of dialysis catheter: □ Internal jugular or subclavian □ Femoral □ Fistula or Graft □ Other
Type of filter or cartridge (e.g., Fresenius 160, Revaclear MAX, etc.): __________ □ Unknown
Duration: ____ (hours)
Blood flow rate: ____ (mL/min)
Dialysate flow rate: ____ (mL/min)

**Session 5**

Type (check all that apply): □ HD □ SLED □ Hemoperfusion □ Albumin
Location of dialysis catheter: □ Internal jugular or subclavian □ Femoral □ Fistula or Graft □ Other
Type of filter or cartridge (e.g., Fresenius 160, Revaclear MAX, etc.): __________ □ Unknown

Duration: ____ (hours)

Blood flow rate: ____ (mL/min)

Dialysate flow rate: ____ (mL/min)

Did the patient have CRRT? □ Yes □ No □ Unknown

If yes, then please include the following:

Approximate duration of CRRT used for poisoning only: __________ (hrs) □ Not available

[Note: Please determine as clearly as possible. Do not attempt to exclude “down time” such as when the machine is not actually running.]

Blood flow rate ____ (mL/min) □ Not available

Dialysate flow rate ____ (mL/hour) □ Not available

Did the patient have PD? □ Yes □ No □ Unknown

If yes, then please include the following:

Duration (check ‘continuous’ if ongoing for ESRD or AKI): ____ (hours) OR □ Continuous

Exchange volume ____ (L) □ Unknown

Number of exchanges per day____ □ Unknown

Type of Dialysate

□ 1.5% dextrose □ 2.5% dextrose □ 4.25% dextrose □ Icodextrin or polymer solution

□ Other - Please describe: __________________ □ Unknown

Did the patient have Hemoperfusion? □ Yes □ No □ Unknown

If yes,

Duration ____ (hours) □ Not available

Blood flow rate ____ (mL/min) □ Not available

Was hemodialysis simultaneously performed? □ Yes □ No □ Not available

[Note: If yes, also please describe above]

Type of filter □ Charcoal □ Other resin - Please specify: _________ □ Not available

Name of filter column (if known) ______________ □ Not available

Number of filter cartridges required:

□ One □ > One - Please specify how many: _________ □ Not available

Did the patient have Plasmapheresis or Plasma Exchange? □ Yes □ No □ Unknown

If yes,

Amount of plasma exchanged (specify liters or plasma volume):_________

Type of Replacement fluid: □ Albumin □ Albumin/Saline □ FFP □ Saline

How many sessions?_______ □ Not available

Did the patient have RBC Exchange Transfusion? □ Yes □ No □ Unknown

If yes,

Volume exchanged (# Units RBC exchanged) _________ □ Not available

How many sessions?_______ □ Not available

Did the patient have Albumin Dialysis? □ Yes □ No □ Unknown

If yes,

Duration ____ (hours) □ Not available

Blood flow rate ____ (mL/min) □ Not available

Dialysate flow rate ____ (mL/min) □ Not available
Modality: □ MARS □ Single-pass albumin dialysis □ Not available
□ Other Please specify: __________________
Amount of albumin used (if known): ______ □ Not available

Other Extracorporeal Modality - Please describe briefly:
________________________________________________________

Reason for ECT and Drugs/Toxins Treated
Please list up to five reasons (#1-#5) why ECT was started from the most (#1) to least (#5) important:

____ Removal of drug/toxin      _____ Electrolyte imbalance
____ AKI          _____ Hemodynamic instability
____ ESRD          _____ Respiratory failure
____ Metabolic acidosis    _____ Other:

Please specify: __________________________

Please provide electrolyte levels drawn before initial ECT:

Potassium: □ Known □ Not Available □ Not Performed
If known - K (mEq/L or mmol/L) __________________
Calcium: □ Known □ Not Available □ Not Performed
If known - Ca (mg/dL) __________________
Magnesium: □ Known □ Not Available □ Not Performed
If known - Mg (mg/dL) __________________
Phosphate: □ Known □ Not Available □ Not Performed
If known - Phos (mg/dL) __________________
Sodium: □ Known □ Not Available □ Not Performed
If Known Na (mEq/L or mmol/L) __________________

Was ECT started for electrolyte imbalance?
□ Yes □ No □ Unknown

What drugs/toxins were being treated with extracorporeal therapy? (list up to 5). Also include levels (including units) if available. Please indicate type of ECT used in round of treatment - HD, hemoperfusion, SLED, CRRT, PD, albumin, pheresis.

Treatment Round #1 (Initial, Peak, Pre-ECT, Initial Post-ECT, intra-ECT Levels):
Indicate Treatment Type: ____________________________

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<thead>
<tr>
<th>#</th>
<th>Agent</th>
<th>Initial Level</th>
<th>Units</th>
<th>Time since Presentation (Hrs)</th>
<th>Peak Level</th>
<th>Units</th>
<th>Time since End ECT (Hrs)</th>
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<th>#</th>
<th>Agent</th>
<th>Pre-ECT Level*</th>
<th>Units</th>
<th>Time to ECT (Hrs)</th>
<th>Initial Post-ECT Level**</th>
<th>Units</th>
<th>Time since End ECT (Hrs)</th>
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<td>Agent</td>
<td>Levels During ECT*** [Enter up to 3 intra-ECT Measurements per Agent]</td>
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* Pre-ECT Interval: Time interval between lab drawn and when therapy started (in Hours)
** Initial Post ECT Interval: Time interval between when therapy stopped and lab drawn (in Hours)
*** ECT Therapy Level: Time interval into therapy when level drawn (in Minutes)

**Treatment Round #2 (Pre-ECT, Post-ECT Levels):**
Indicate Treatment Type: __________________________

<table>
<thead>
<tr>
<th>Agent</th>
<th>Pre-ECT Level*</th>
<th>Units</th>
<th>Time to ECT (Hrs)</th>
<th>Post-ECT Level**</th>
<th>Units</th>
<th>Time since End ECT (Hrs)</th>
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* Pre-ECT Interval: Time interval between lab drawn and when therapy started (in Hours)
** Post ECT Interval: Time interval between when therapy stopped and lab drawn (in Hours)

**Treatment Round #3 (Pre-ECT, Post-ECT Levels):**
Indicate Treatment Type: __________________________

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<tr>
<th>Agent</th>
<th>Pre-ECT Level*</th>
<th>Units</th>
<th>Time to ECT (Hrs)</th>
<th>Post-ECT Level**</th>
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* Pre-ECT Interval: Time interval between lab drawn and when therapy started (in Hours)
** Post ECT Interval: Time interval between when therapy stopped and lab drawn (in Hours)

Please list any additional drug levels for any drug not listed above drawn before, during, or after extracorporeal therapy (even if the therapy was not intended to remove this drug): __________________________

______________________________
______________________________

**Clinical Impact of ECT**

Check the clinical signs that extracorporeal therapy affected within 6 hours of the completion of treatment, and for each clinical sign checked indicate the type of effect:

- [ ] None/Not applicable
☐ Mental status?
  ☐ Improved  ☐ Worsened  ☐ No change
  Glasgow Coma Scale (if assessed) Pre-ECT _____ Post-ECT _____ ☐ Not Available

☐ Hemodynamics?
  ☐ Improved  ☐ Worsened  ☐ No change
  Number of vasopressors at: Start of ECT_____ Post-ECT ____ ☐ Not Available

☐ Respiratory status?
  ☐ Improved  ☐ Worsened  ☐ No change
  FiO2 on ventilator (if applies): Pre-ECT ____ Post-ECT ____ ☐ Not Available
  Able to extubate within 6 hours of ECT? ☐ Yes  ☐ No  ☐ Unknown

☐ Lactic acidosis (not serum bicarbonate or anion gap, just serum lactate)?
  ☐ Improved  ☐ Worsened  ☐ No Change
  Serum lactate (mg/dL): Pre-ECT ____ Post-ECT ____ ☐ Not Available

☐ Other? Please specify: ________________________________
  ☐ Improved  ☐ Worsened  ☐ No change

Did the patient have persistent signs or symptoms at discharge related to poisoning?
  ☐ Yes  ☐ No  ☐ Unknown
  If yes, please describe briefly ________________________________

Did the patient have AKI? ☐ Yes  ☐ No  ☐ Unknown
  If yes, did AKI resolve by time of hospital discharge?
  ☐ Completely resolved  ☐ Partially resolved  ☐ Did not resolve  ☐ Unknown

Was there a clinical complication due to extracorporeal therapy? ☐ Yes  ☐ No  ☐ Unknown
  If yes, please describe below:
  ☐ Clinically significant bleeding during therapy
  ☐ Clinically significant bleeding after therapy that was related to therapy
    (e.g., bleeding caused by thrombocytopenia or coagulopathy)
    Please describe: ____________________________________________
  ☐ Hypotension requiring early cessation of therapy
  ☐ Anaphylaxis, angioedema, or anaphylactoid reaction
  ☐ Vascular catheter complication: pneumothorax
  ☐ Vascular catheter complication: catheter-associated infection
  ☐ Vascular catheter complication: other
    Please describe: ____________________________________________
  ☐ Peritoneal infection
    Did peritoneal catheter require removal? ☐ Yes  ☐ No
  ☐ Severe electrolyte imbalance
    Please describe: ____________________________________________
  ☐ Hemolysis during therapy
  ☐ Cardiac arrest
  ☐ Other - Please describe: ________________________________

Additional Required Information:

Please specify name(s) of treating toxicologist(s):

______________________________________________________________________________________________
Contact email address: ____________________________________________

Case completed? □ Yes □ No