**Supplemental Table 1. NEPHRON Steering Committee**

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| --- | --- |
| Center | Member |
| Children’s Hospital of Colorado | Katja Gist, DO, MSc |
| Children’s Hospital of Philadelphia | Joshua Blinder, MD |
| Cincinnati Children’s Hospital Medical Center | David Cooper, MD, MPH |
| Cincinnati Children’s Hospital Medical Center | \*Jeffrey Alten, MD |
| Lucile Packard Children’s Hospital Stanford | Catherine Krawczeski, MD |
| Primary Children’s Hospital | David Bailly, DO |
| UAB Children’s of Alabama | David Askenazi, MD, MPH |
| UAB Children’s of Alabama | Santiago Borasino, MD, MPH |
| Cincinnati Children’s Hospital Medical Center | David LS Morales, MD |

**\*Executive director**

**Supplemental Table 2. Participating Centers and Principal Investigators**

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| Center | Principal Investigators |
| Arkansas Children’s Hospital  | Parthak Prodhan, MD |
| Boston Children’s Hospital | Muhammad Ghebis, MD |
| Children’s Healthcare of Atlanta | Shanelle Clarke, MD |
| Children’s Hospital of Philadelphia | Josh Blinder, MD |
| Children’s Hospital of Pittsburg of UPMC | Joan Sanchez de Toledo, MD, PhD |
| Children’s Hospital of Wisconsin | Rebecca Russell, MD |
| Children’s Medical Center of Dallas | Joshua Koch, MD |
| Children’s National Medical Center | J. Wesley Diddle, MD |
| Cincinnati Children’s Hospital Medical Center | Jeffrey Alten, MD |
| Le Bonheur Children’s Hospital | Sachin Tadphale, MD, MBBS, MPH |
| Lucile Packard Children’s Hospital Stanford | Catherine Krawczeski, MD |
| Medical City Children’s Hospital, Dallas | Tia Raymond, MD, FAAP, FAHA |
| Medical University of South Carolina Children’s Hospital | Jason Buckley, MD |
| Monroe Carell Jr. Children’s Hospital at Vanderbilt | Rene VanDevoorde III, MD |
| Nicklaus Children’s Hospital | Jun Sasaki, MD |
| Primary Children’s Hospital | David Bailly, DO |
| Riley Children’s Hospital | Kevin Valentine, MD |
| St. Louis Children’s Hospital | Priya Bhat, MD, MS |
| Texas Children’s Hospital  | Natasha Afonso, MD, MPH |
| UAB Children’s of Alabama | Santiago Borasino, MD, MPH |
| UCSF Benioff Children’s Hospital | Sarah Tabbutt, MD |
| University of Michigan C.S. Mott Children’s Hospital | Dave Selewski, MD |

**Supplemental Table 3. NEPHRON Neonatal CS-AKI Data Module**

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| Daily maximum creatinine and date of creatinine – preoperative\* to POD 6 of index operation |
| Operating room net fluid balance  |
| Total operating room UOP (incision time to ICU arrival time) |
| Intraoperative diuretics (yes or no) |
| Modified ultrafiltration (yes/no) |
|  Pre-modified ultrafiltration hematocrit |
|  Post-modified ultrafiltration hematocrit |
|  Total volume (mL) |
| POD 0-6 daily weights (kg) |
| POD 1-6 daily net fluid balance (mL) |
| Hourly UOP from postoperative ICU admission to morning of POD 1  |
| POD 1-6 total daily UOP (mL)  |
| POD 0-6 hemodialysis (Yes or No)  |
|  Acute kidney injury (start/stop) |
|  Fluid Overload (start/stop) |
| POD 0-6 peritoneal dialysis (Yes or No) |
|  Acute kidney injury (start/stop) |
|  Fluid overload (start/stop) |
|  #Prophylactic (start/stop) |
|  αPassive drainage (start/stop) |
|  Daily net output (mL) |
| POD 0-6 diuretics (yes/no) |
|  Drug name |
|  Parenteral/enteral |
|  Bolus/infusion |
|  Date/time first furosemide dose |
| Total postoperative PRBC transfused POD 0-POD 1 (mL) |

POD 0 defined as ICU admit postoperative until next am

\*lowest creatinine used closets to surgery as baseline

#peritoneal dialysis started upon arrival to the ICU and/or did not qualify as acute kidney injury or fluid overload

αperitoneal drain placed to drain only

CS-AKI, cardiac surgery associated acute kidney injury; POD, postoperative day; UOP, urine output; ICU, intensive care unit; PRBC, packed red blood cells; mL, milliliters; kg, kilograms

**Supplemental Table 4. Detailed data definitions**

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| Variable | Definition |
| Time at which charting starts | Time when institutions 24 hour totals start. For example, if institutions 24 hour totals start over at 0700 that time entered. This will be used to self-populate the number of POD 0 hourly UOP variables based on ICU admit time as entered in parent PC4 database |
| Foley catheter | Yes or no if one was placed for enrollment qualifying surgery. If removed prior to POD 1, time of removal collected |
| Modified ultrafiltration  | ultrafiltration performed via the cardiopulmonary bypass pump that is performed after bypass has been discontinued and prior to removal of the bypass cannulas. Total removed in mL’s collected |
| Total PRBC transfused in CVICU through POD 1 (mL) | This is the cumulative total in mL’s of all packed red blood cells administered from CICU post-operative admit until start of charting the next am. |
| Postoperative days |  |
|  POD 0 | The calendar day of surgery until midnight  |
|  POD 1-6 | Sequential days (24 hours) from surgery  |
| POD 0-6 daily weights (kg) | Daily weights obtained in the postoperative period. If more than one weight available first available collected |
| Vasoactive inotrope score (POD 1-2) | Calculated based on doses of the following medications in mcg/kg/min (Vasopressin units/kg/min) at 0700: (Dopamine x 1) + (Dobutamine x 1) + (Epinephrine x 100) + (Norepinephrine x 100) + (Milrinone x 10) + (Vasopressin x 10,000) |
| Creatinine (mg/dL) | Dates and values available not from a point of care test and/or blood gas  |
|  First available (preop) | First available creatinine (either birth or hospital admit) since hospital admission until surgical procedure.  |
|  Lowest (preop) | Lowest value from time of admit until entering the operating room on the day of surgery. This can be the same value as entered for either first available or last before surgery.  |
|  Last before surgery (preop) | Last obtained prior to the patient entering the operating room |
|  POD 0-6 | Highest daily value obtained for corresponding POD |
|  Last before hospital discharge | Last obtained during the hospitalization in which the study qualifying surgery was performed |
| Hemodialysis | Yes or no if initiated within 6 days after surgery for either acute kidney injury or fluid overload |
| Peritoneal Dialysis |  |
|  AKI or FO | Initiated within 6 days after surgery for either acute kidney injury or fluid overload |
|  Prophylaxis | Initiated POD 0 before any onset of AKI or FO |
|  Passive drainage | Catheter was place but active PD was not initiated for any reason |
| Start of dialysis | Date and time of initiation of dialysis within 6 days after surgery |
| End of dialysis | Date and time of discontinuation of dialysis for greater than 72 hours. If death occurred while on dialysis date and time of death entered.  |
| CVOR UOP (mL) | Total UOP produced in operating room during enrollment qualifying surgery as charted by anesthesia |
| Total OR intake (mL) | Total intake administered in the operating room during enrollment qualifying surgery as charted by anesthesia and perfusion, including blood products but not including cell saver |
| Total OR output (mL) | Total output produced in the operating room during enrollment qualifying surgery as charted by anesthesia and perfusion, including ultrafiltration |
| POD 0 UOP (mL) | Hourly UOP from time of ICU admit from enrollment qualifying surgery until start of charting the next morning.  |
| POD 1-6 daily fluid totals | POD 1 total recorded from ICU admit post-operative until charting restarts the next morning after surgery and reflects the previous day’s fluid totals.  |
|  Active PD output (mL) | 24-hour total net output recorded the morning of the associated post-operative day. Dialysate in minus drainage out |
|  Passive PD output (mL) | 24-hour total fluid out when dialysate is not used |
|  UOP (mL) | 24-hour total urine output |
|  Net fluid balance (mL) | 24-hour cumulative total of all the fluid in minus all output including UOP, dialysis, and chest tube drainage. Does not include volume from the preoperative period or the operating room during the enrollment qualifying surgery. If re-operation occurred volume status from the surgery including in that calendar days total balance.  |
| Furosemide Stress Test |  |
|  Operating room | Yes or no if any dose administered in the operating room during enrollment qualifying surgery. If yes, time of the last dose administered in the CVOR.  |
|  CVICU | Yes or no if any dose administered within 24 hours of ICU admit after enrollment qualifying surgery. If yes, date and time first dose administered. |
|  Other diuretics | Yes or no if any diuretics administered ± 6 hours from the first CVICU dose |
|  1-6 hourly UOP (mL) | Hourly UOP from time of first dose administered in the CVICU until 6 hours after |
| Diuretics |  |
|  Intraoperative  | Yes or no if mannitol or furosemide administered in operating room during enrollment qualifying surgery by either anesthesia or perfusion |
|  POD 0-1 | Any diuretics administered in the post-operative for that calendar day. Name of medication, mode of delivery (intravenous, enteral, or both), method of administration (infusion, intermittent, or both) |