



Patient Identification Information

SISTERS OF CHARITY HOSPITAL • Buffalo, NY  SISTERS OF CHARITY HOSPITAL ST JOSEPH Campus • Cheektowaga, NY  
 KENMORE MERCY HOSPITAL • Kenmore, NY  MERCY HOSPITAL • Buffalo, NY  MERCY HOSPITAL Orchard Park division • Orchard Park, NY

## ACUTE RENAL FAILURE ORDERS

page 1 of 3

Authorization is hereby given to dispense the generic/therapeutic equivalent unless otherwise indicated by the prescriber

Date:	Time:	PRESCRIBER ORDERS
<b>Level of care:</b> Admit to: <input type="checkbox"/> Observation <input type="checkbox"/> Ambulatory surgery (ASU) <input type="checkbox"/> Inpatient <b>Location:</b> <input type="checkbox"/> Med Surg <input type="checkbox"/> Telemetry ( <i>Indication</i> ) _____ <input type="checkbox"/> Critical Care Unit		
Diagnosis: _____ Admitting Physician: _____ Condition: <input type="checkbox"/> Stable <input type="checkbox"/> Fair <input type="checkbox"/> Serious <input type="checkbox"/> Critical Consults: <input type="checkbox"/> Nephrology: _____ <input type="checkbox"/> Urology: _____ <input type="checkbox"/> Other: _____		
<input checked="" type="checkbox"/> Obtain Health Care Proxy if available <input type="checkbox"/> Old records to floor <input type="checkbox"/> Vital signs as per protocol <input type="checkbox"/> Orthostatic BPs <input checked="" type="checkbox"/> <b>Notify MD if: Systolic BP less than 90 or greater than 170, HR less than 50 or greater than 120, RR greater than 24, SPO2 less than 92%, Temp less than 95° F or greater than 101° F</b>		
<b>1. ACTIVITY:</b> <input type="checkbox"/> Bedrest ( <b>Readdress in 24 hours</b> ) <input type="checkbox"/> Elevate head of bed _____ <input type="checkbox"/> Bedrest / Bathroom privileges <input type="checkbox"/> Out of bed to chair <input type="checkbox"/> Ambulate <input type="checkbox"/> Activity as tolerated		
<b>2. DIET:</b> <input type="checkbox"/> 2 gram Na <sup>+</sup> <input type="checkbox"/> 2 gram K <sup>+</sup> <input type="checkbox"/> Other _____ <input type="checkbox"/> Fluid restriction _____ ml/24 hours <input type="checkbox"/> Dietitian consult		
<b>3. NURSING ORDERS / ASSESSMENTS:</b> <input type="checkbox"/> Height and Weight on admission <input type="checkbox"/> Daily weights <input type="checkbox"/> Insert foley catheter - routine catheter care <input type="checkbox"/> Measure Intake/Output - Hourly urine output - <b>Notify MD if less than 30 mL/hour</b> <input type="checkbox"/> Pulmonary Artery Catheter monitoring: _____ <input type="checkbox"/> CVP monitoring _____		
<b>4. RESPIRATORY:</b> <input type="checkbox"/> Nasal Cannula _____ L/min Monitor O2 saturation and titrate oxygen per protocol <input type="checkbox"/> Other: _____		
<b>5. IV INFUSION:</b> <input type="checkbox"/> Dextrose 5% in Water at _____ mL/hr <input type="checkbox"/> Sodium Chloride 0.9% at _____ mL/hr <input type="checkbox"/> Sodium Chloride 0.45% at _____ mL/hr <input type="checkbox"/> Other: _____ at _____ mL/hr		
<b>6. MEDICATIONS:</b> <b>Loop Diuretics: (Reminder: Avoid Use except in Oliguric ATN)</b> <input type="checkbox"/> Furosemide (Lasix) _____ mg IV every _____ hrs <input type="checkbox"/> Furosemide (Lasix) _____ mg PO every _____ hrs <input type="checkbox"/> Furosemide (Lasix) 250 mg in 250 mL D5W IV infusion at _____ mg per hr <input type="checkbox"/> Bumetanide (Bumex) _____ mg IV every _____ hs <input type="checkbox"/> Bumetanide (Bumex) _____ mg PO every _____ hs <input type="checkbox"/> Thiazide-Related Diuretic: Metolazone (Zaroxolyn) _____ mg PO every _____ hours <b>Phosphate-Lowering Agents: ( For Use in Hyperphosphatemia)</b> <input type="checkbox"/> Calcium Acetate (PhosLo) 667 mg _____ gelcap(s) PO TID with meals <input type="checkbox"/> Lanthanum Carbonate (Fosrenol) _____ mg PO (to be chewed) TID with meals <input type="checkbox"/> Sevelamer (Renagel) _____ mg PO TID with meals		
<b>Prescriber Signature:</b> _____		

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**6. MEDICATIONS;**

**Potassium-Lowering Agents: ( For Use in Hyperkalemia)**

- Sodium Polystyrene Sulfonate (Kayexalate) \_\_\_\_\_ grams PO X 1 dose
- Sodium Polystyrene Sulfonate (Kayexalate) \_\_\_\_\_ grams Rectally (retention enema) X 1 dose  
*Reminder! Oral route is preferred*
- Regular insulin \_\_\_\_\_ units IV X1 dose
- 50% Dextrose 50 mL IV over 20 minutes X1 dose
- 10% Calcium Gluconate 10 mL in 50 mL D5W IV X 1 dose over 10 min (**Caution in digitalized patients**)
- Albuterol (Ventolin) nebulizer 10 mg diluted in 4 mL NS over 10 minutes X1 dose
- Sodium Bicarbonate 50 mEq/50 mL IV X 1 amp

**Metabolic Acidosis**

- Na Bicarbonate Infusion (severe metabolic acidosis HCO<sub>3</sub> less than 10mEq or pH less than 7.2)
- Na Bicarbonate 50 mEq/50 mL \_\_\_\_\_ amp(s) in D5W 1,000 mL IV at \_\_\_\_\_ mL/hour
- Potassium supplement:** \_\_\_\_\_
- GI Prophylaxis:** \_\_\_\_\_

**7. STUDIES: If not done in the ED**

**Lab:**

- CBC with diff.     Anemia Panel     ABG     CMP     BMP     Uric acid     Phosphorus level
- Magnesium     Serum Toxicology     Serum Osmolarity

**REMINDER! – Please calculate Fractional Excretion of Sodium**

Spot urine for:  Protein     Na     Cl     K     Creatinine

- UA – Routine & Microscopy     Urine Eosinophils     Urine Osmolarity     Urine Toxicology
- Urine protein/Urine creatinine ratio (24 hour urine)     UPIP/UIFE     SPIP/SIFE

**Microbiology:**

- Blood culture x 2     Urine culture

**Serology:**

- Hepatitis profile (Hep. A,B,C)     Anti-Streptolysin O -Antibody titres     Anti-GBM Antibody
- C-ANCA     Complement C3     Complement C4     Complement CH50
- CK-total     P-ANCA     Sed. Rate     24 hour Proteinuria

**Imaging:**

- X-ray Chest     MRA Abdomen     Ultrasound Abdomen kidney
- CT Abdomen with contrast     CT Pelvis with contrast     Renal Flow Scan with contrast
- CT Abdomen without contrast     CT Pelvis without contrast     Renal Flow Scan without contrast

\* Consider administration of Mucormyst and Sodium Bicarbonate for prevention of Contrast Nephrotoxicity

**Cardiology:**  EKG

**Other Tests:** \_\_\_\_\_

**8. Venous Thromboembolism Precautions: (VTE) (May Select more than One)**

- Sequential Compression Device until ambulatory
- Enoxaparin (Lovenox) \_\_\_mg subcutaneous q daily
- Heparin 5000 units subcutaneous every 8 hours
- Heparin 5000 units subcutaneous every 12 hours
- No VTE Prophylaxis (REASON)     Not a Candidate     Contraindicated     Other (\_\_\_\_\_)

**9. See Dialysis order sheet \* See Page 3 for recommendations for Dialysis**

**10. Other:** \_\_\_\_\_

**Reminder! – Avoid use of contrast studies, ACE-inhibitors, Angiotensin Receptor Blockers, COX-2 Inhibitors, NSAIDS, Contrast, metformin (Glucophage). Consider need to check Drug levels if using Vancomycin**

**Prescriber Signature:** \_\_\_\_\_

## ACUTE RENAL FAILURE ORDERS

This page is an appendix to ARF pre-printed order sheet. The information included in this page may be useful to guide treatment. Renal Replacement Therapy is dictated by available modalities. There is lack of definitive outcome for various Renal Replacement Therapy modalities.

### Proposed Criteria for Initiation of Renal Replacement Therapy in Critically Ill Patients with ARF

1. Oliguria - urine output < 200mL in 12 hours
2. Anuria - urine output < 50ml in 12 hours
3. Serum Potassium (K) > 6.5 mmol/L
4. Severe acidemia - pH < 7.0
5. Azotemia - BUN > 85 mg/dl
6. Uremic Encephalopathy
7. Uremic Neuropathy/Myopathy
8. Uremic Pericarditis
9. Plasma Sodium (Na) abnormalities: Conc >155mmol/L or < 120 mmol/L
10. Hyperthermia
11. Drug Overdose with dialyzable toxin

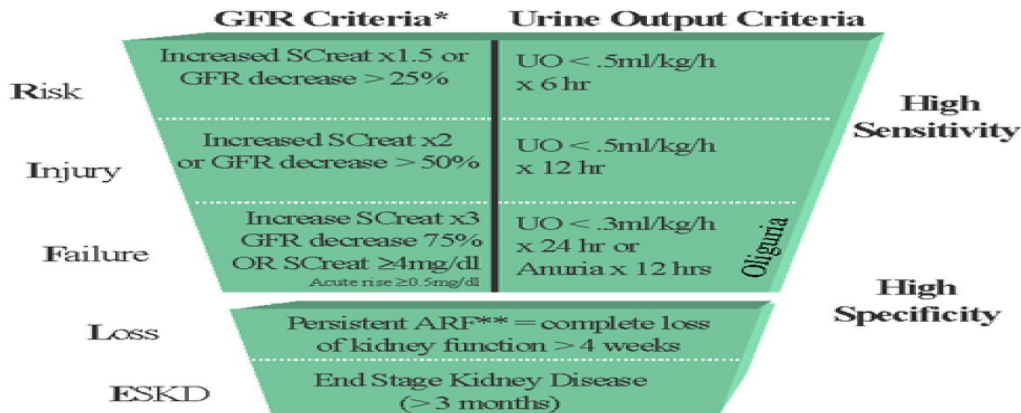
### Indications for Renal Support

- |  |  |
|--|--|
| <ol style="list-style-type: none"> <li>1. Nutrition</li> <li>2. CHF</li> <li>3. ARDS with Respiratory acidosis</li> <li>4. Liver Failure</li> <li>5. Pancreatitis</li> </ol> | <ol style="list-style-type: none"> <li>6. Fluid management in multi-organ failure</li> <li>7. Lactic acidosis</li> <li>8. Crush Injury</li> <li>9. Tumor Lysis Syndrome</li> <li>10. Sepsis</li> </ol> |
|--|--|

Fractional Excretion of Sodium: FENa is greater than 1% and usually greater than 3% with acute tubular necrosis and severe obstruction of the urinary drainage of both kidneys. It is generally less than 1% in patients with acute glomerulonephritis, hepatorenal syndrome, and states of prerenal azotemia such as congestive heart failure or dehydration.

$$FE_{Na} = \frac{U_{Na} * P_{Cr}}{P_{Na} * U_{Cr}} \times 100$$

Definition of Acute Renal Failure: Proposed classification scheme for acute renal failure (ARF) by ADQI workgroup (Adult Dialysis Quality Initiative). The classification system includes separate criteria for creatinine and urine output (UO). A patient can fulfill the criteria through changes in serum creatinine (SCreat) or changes in UO, or both. The criteria that lead to the worst possible classification should be used.



Note that the F component of RIFLE (Risk of renal dysfunction, Injury to the kidney, Failure of kidney function, Loss of kidney function and End-stage kidney disease) is present even if the increase in S.Creat. is under threefold as long as the new S. Creat is greater than 4.0 mg/dl (350 μmol/l) in the setting of an acute increase of at least 0.5 mg/dl (44 μmol/l). The designation RIFLE-FC should be used in this case to denote 'acute-on-chronic' disease. Similarly, when the RIFLE-F classification is achieved by UO criteria, a designation of RIFLE-FO should be used to denote oliguria. The shape of the figure denotes the fact that more patients (high sensitivity) will be included in the mild category, including some without actually having renal failure (less specificity). In contrast, at the bottom of the figure the criteria are strict and therefore specific, but some patients will be missed. (Bellomo the ADQI workgroup et al. Critical Care 2004 8:R204 doi:10.1186/cc2872)