SUPPORT AKI
Strategy for uptake of processes for recognizing and responding to AKI

Strategy for UPtake of PrOcesses for Recognizing and Responding To Acute Kidney Injury

RECOGNIZE

- ✓ Check serum creatinine results daily, and review AKI definition and staging.
- ✓ Acknowledge patients flagged by nursing staff

AKI: Definition and Staging		
Stage	***Serum Creatinine***	***Urine Output***
AKI 1	1.5-1.9 times baseline **OR** 26 µmol/litre within 48 hrs	< 0.5ml/kg/h for 6-12 hrs
AKI 2	2-2.9 times baseline	< 0.5ml/kg/h for ≥ 12 hrs
AKI 3	3 times baseline **OR** Increase to over 353 µmol/litre **OR** Initiation of renal replacement therapy	< 0.3 ml/kg/h for ≥ 24 hrs OR Anuria for ≥ 12 hrs

RESPOND

Fluid Interventions & Medication Adjust (Refer to AKI Order Set)

Intravenous Therapies for Hypovolemic/Potentially Volume Response Patients:

- ✓ Isotonic crystalloids (0.9% NaCl or Ringer's Lactate) are preferred for initial management for expansion of intravascular volume
- ✓ Diuretics are not recommended to treat AKI, except in the management of volume overload.
- ✓ Boluses of intravenous fluids are considered the most effective strategy for correcting hypovolemia.
  - Review volume administration safety concerns, determine risk for volume overload, & select bolus volumes
  - Administer repeat boluses as needed unless signs of volume overload/cardio-respiratory compromise are present

Medication Management:

- ✓ Consider **stopping medications that** affect kidney function
- ✓ Consider adjusting doses for **renally cleared drugs** for cases of persistent severe AKI (Stage 2 or Stage 3 AKI only)

REFER

Refer to the Clinical Knowledge Topic on Acute Kidney Injury on AHS Insite for further guidance of AKI management, including the need for consultation with specialists.

RISK OF FLUID OVERLOAD CAUSING CARDIO-RESPIRATORY COMPROMISE		
Risk Level	**Criteria**	**Recommended Volumes**
Low	No history of heart failure Left ventricular ejection fraction > 55% No history of chronic kidney disease No third spacing of fluids	250 to 1000 mL bolus(es)
Intermediate	Heart failure (mild systolic dysfunction) Left ventricular ejection fraction 45-55% History of chronic kidney disease Minor third spacing of fluids	100 to 500 mL bolus(es)
High	History of heart failure (moderate/severe dysfunction) Left ventricular ejection fraction < 45% History of advanced chronic kidney disease Significant third spacing of fluids	50 to 250 mL bolus(es)

RISK SCORING SYSTEM FOR URINARY TRACT OBSTRUCTION*	POINTS
History of hydronephrosis	< 3 points, considered High Risk
Recurrent urinary tract infection	1 point
Diagnosis consistent with possible obstruction (e.g. Benign prostatic hyperplasia, Abdominal or pelvic cancer, neurogenic bladder, single functioning kidney, previous pelvic surgery)	1 point
Non-black race	1 point
Absence of exposure to nephrotoxic medication	1 point
Absence of congestive heart failure	1 point
Absence of pre-renal cause of AKI	1 point
Low Risk: < 2 points; Medium Risk: = 3 points; High Risk: > 3 points	

MEDICATION MANAGEMENT

- ✓ **Medications to be avoided or dose adjusted***
  - Diuretics, NSAIDs, ACEi, ARBs, CNIs, Anti-infectives
- ✓ **Useful resources for medication dosing for renal impairment**
  - **Lexicomp Online:** https://krs.libguides.com/home
  - https://www.thinkkidneys.nhs.uk/aki/resources/junior-doctors/
- ✓ **Follow up/Communication:** provide comprehensive information on medication changes and resumption schedule to:
  - Patient
  - Family physician

* For full listing of high risk medications and guidance on ordering ultrasound test for suspected urinary obstruction: Refer to the AHS Clinical Knowledge Topic on Acute Kidney Injury.