Consensus Guidelines for IV Fluid Management:
Northern California Pediatric Hospital Medicine Consortium

Executive summary

Objectives

- Standardize care of pediatric patients who require maintenance IV fluids in the hospital
- Reduce utilization of maintenance IV fluids
- Use best available evidence to guide selection and monitoring of appropriate maintenance IV fluids with consideration for patient-specific factors

Recommendations

- Maintenance IV fluids are appropriate for euvolemic patients who cannot take adequate enteral fluids
- Calculate hourly maintenance fluid rates using standard weight-based formula (4-2-1 rule)
- Do not use maintenance IV fluids at rates above calculated maintenance, and calculate replacement for ongoing fluid losses separately from maintenance
- In patients older than 28 days who do not meet exclusion criteria, use isotonic fluids
- Use caution and select fluids on a case-by-case basis for patients with the following conditions: Renal disease/renal dysfunction, endocrine disorders causing electrolyte abnormalities, neurosurgery or brain injury, severe cardiac disease, ICU Level of Care (PICU or NICU), severe malnutrition, known metabolic disease, sickle cell patients, liver failure/hepatic dysfunction, high extrarenal water loss
- Do not use ¼ NS for maintenance fluids outside the neonatal period
- Add 5% dextrose to maintenance fluids for patients with limited or no oral nutritional intake
- Add potassium to maintenance fluids unless contraindicated
- Check serum electrolytes (with attention to sodium, chloride, bicarbonate) at 24 hours after initiation of maintenance IV fluids for patients receiving >75% of maintenance needs via IV; re-check serum electrolytes as indicated
- Monitor strict intake and output, weight, blood pressure, and signs of fluid overload daily in patients receiving maintenance IV fluids
- Discontinue maintenance IV fluids as soon as patients can take adequate enteral fluids

Methods

This guideline was developed through local consensus based on published evidence and expert opinion as part of the UCSF Northern California Pediatric Hospital Medicine Consortium.