a trchealthcare brand
Pharmacist's Letter
Hospital

Think Outside the Box to Help Conserve IV Fluids

You'll be called on to help your hospital conserve IV fluids.

This time, shortages are due to the effects of Hurricane Helene on Baxter's North Carolina facility...and are likely to last several months.

Be equipped with ideas to help limit the impact on patient care.

Optimize using po fluids and meds. Work with nursing to evaluate patients receiving IV fluids for transition to oral hydration.

Maximize IV-to-po switches...even for meds without an exact conversion. If needed, work with IT to see if your EHR can help identify candidates. Use our chart, IV-to-PO Conversions, for dosing guidance.

Also reinforce shorter courses of IV antibiotics when appropriate.

Safely switch intravenous meds to IV push when possible.

Use sterile water to dilute IV push meds when possible. Using D5W or normal saline instead of sterile water...or not diluting enough...can increase osmolarity and extravasation risk.

For example, you can dilute many IV push antibiotics with 10 mL of sterile water...but use 20 mL for 1 g doses of meropenem. Consider batching common antibiotics in syringes for IV push administration.

Continue to avoid bacteriostatic diluents for IV push doses in neonates...the preservative can cause "gasping syndrome."

Limit IV push doses to a max of 3 vials/syringe if prepped at the bedside...due to USP <797> standards. And administer within 4 hours.

For meds that shouldn't be pushed, consider alternatives...such as IV push cefepime instead of piperacillin/tazobactam for *Pseudomonas*.

Save large-volume fluids in short supply. Work with your hospital to allow automatic switches to alternative IV fluids...such as D5W with 0.225% sodium chloride (D5 1/4 NS) in place of D5W.

Consider extending IV solution hang times to 72 or 96 hours. And educate staff NOT to pre-spike IV fluids.

Clarify open-ended continuous infusion orders to include a stop date/time or max amount to infuse. Use catheter locks or flushes instead of infusions in patients with orders to "Keep vein open" or "KVO."

Consider prioritizing large-volume IV fluids for certain situations.

For instance, try to save dextrose solutions for women or small children...they're more susceptible to hypoglycemia when fasting.

And reserve isotonic fluids (NS, lactated Ringer's, etc) for kids under 18 if possible...due to risk of hyponatremia with hypotonic fluids.

Also save lactated Ringer's for septic patients. Avoid hetastarch for fluid resuscitation...due to kidney injury and bleeding risks.

Consider infusing high-alert meds with a syringe pump.

For example, instead of using a large-volume infusion, consider prepping insulin drips in 50 mL syringes. Label syringes clearly to help avoid accidental IV push...such as "For syringe pump use only."

Cite this document as follows: Article, Think Outside the Box to Help Conserve IV Fluids, Hospital Pharmacist's Letter, November 2024

Assist with inventory management. Help ensure active back orders are in place for IV fluids...along with orders from alternative suppliers, including 503B outsourcing facilities.

And recommend obtaining premixed medications when available.

Leverage “leftovers” on your TPN compounder. For example, compound D5W using leftover D70W...or NS and 1/2 NS using concentrated NaCl.

Also keep a close eye on the inventory of other items, such as syringes, that may increase in usage due to IV bag conservation efforts.

Key References:

-ASHP. Fluid Shortages - Suggestions for Management and Conservation. October 11, 2024. https://www.ashp.org/-/media/assets/drug-shortages/docs/drug-resources-conservation-strategies-iv-fluids.pdf (Accessed October 14, 2024).
-ISMP. Safe Practice Guidelines for Adult IV Push Medications. 2015. https://www.ismp.org/sites/default/files/attachments/2017-11/ISMP97-Guidelines-071415-3.%20FINAL.pdf (Accessed October 4, 2024).
-Australian Commission on Safety and Quality in Health Care. Conservation strategies and safety considerations during intravenous (IV) fluids supply disruption. August 2024. https://www.safetyandquality.gov.au/sites/default/files/2024-08/fact_sheet_conservation_strategies_and_safety_considerations_during_intravenous_iv_fluids_supply_disruption.pdf (Accessed October 4, 2024).
-Feld LG, Neuspiel DR, Foster BA, et al. Clinical Practice Guideline: Maintenance Intravenous Fluids in Children. Pediatrics. 2018 Dec;142(6):e20183083.
-Evans L, Rhodes A, Alhazzani W, et al. Surviving sepsis campaign: international guidelines for management of sepsis and septic shock 2021. Intensive Care Med. 2021 Nov;47(11):1181-1247.
-Weiss SL, Peters MJ, Alhazzani W, et al. Surviving Sepsis Campaign International Guidelines for the Management of Septic Shock and Sepsis-Associated Organ Dysfunction in Children. Pediatr Crit Care Med. 2020 Feb;21(2):e52-e106.

Hospital Pharmacist's Letter. November 2024, No. 401116