

# IV Solution Conservation & Management Strategies

## Overview

Following flooding from Hurricane Helene in September 2024, communities and their healthcare systems continue to be impacted at a local and national level. According to the company, Baxter's North Cove manufacturing site was significantly impacted by the rain and storm surge from Hurricane Helene, which was unprecedented in Western North Carolina and resulted in water permeating the facility.

As hospitals and other healthcare organizations in the Region attempt to mitigate the consequences of disruptions in the supply chain, multiple potential strategies have been identified to support conservation of IV fluids. The identified strategies listed below are not recommendations and are not intended to be medical guidance. Instead, they are offered to help healthcare systems review their response activities and adapt as they monitor their supply deliveries and manage usage. This content does not represent any official views, policy, or other representation of the Department of Health and Human Services Administration for Strategic Preparedness and Response.

## Management and Conservation Strategies

Clinical strategies that may be considered in most settings to begin to conserve IV fluids:

- Strategy 1: Administer oral repletion
  - Details: Utilize oral repletion for hydration, glucose, and electrolytes whenever possible (for example: water, Gatorade, Pedialyte, etc.).
  - Planning: An interdisciplinary team comprised of clinicians/dietician and supply chain leaders, should work to identify, and procure appropriate supplies for oral rehydration of patients. Clinical protocols should be developed or reinforced to support the identification of appropriate patients for oral rehydration therapy.
  
- Strategy 2: Eliminate waste of IV fluid bags
  - Details: Share communication with clinical staff that encourage and support the reduction of waste. Identify opportunities to clarify or enforce existing policies to ensure appropriate waste reduction. One example of quick communication tips to staff include:
    - Select bags of fluid that most closely align with what the clinical need is. For instance, do NOT use multiple 250cc bags if 500cc or 1L is intended to be administered.
    - Do not set up or spike IV fluid bags until ready to administer.
    - Maintain the same IV fluid bags during patient transport/transfer. Ensure bags and tubing are appropriately labeled.
    - Ensure tubing sterility is maintained with appropriate capping of tubing for intermittent administration.
  - Planning: Support clinical leaders in the identification of areas of waste reduction and employ appropriate and targeted communications.
  
- Strategy 3: Decrease number of new IV fluid bags spiked
  - Details:
    - Eliminate slow continuous infusion to keep vein open (KVO) orders, where appropriate after review.

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- Discontinue maintenance IV fluids for patients who do not require them:
  - Be judicious with maintenance of IV fluids. Consider clinical communication prior to starting new bags of fluid “Does this patient still need IV fluids?”
- Decrease hanging fluid waste during location transition:
  - For patients with fluids hanging that differ from templated order sets in an electronic health record (EHR), leave the bag and continue the hanging fluid.
  - Discontinue the order in your EHR and write a new order for the fluid that is already hanging.
- Increase bag hang time when appropriate.
  - While bags are normally changed every 24 hours, consider what is safe for patients to extend bag hang times.
- Identify antibiotics and other medications that can safely be transitioned from IV piggyback administration to IV push.
- Planning: Continue to engage interdisciplinary clinical teams in identifying opportunities in your practice environment to enhance utilization of IV fluids that have already been spiked.
  - Be sure to engage physician, nurse, and pharmacy representatives as well as inclusion of experts in infection control, if considering increasing bag hang time.
- Strategy 4: Limit access to critical or specialty fluids
  - Details: For "repletion" type fluids (isotonic, hypotonic, D5 containing, potassium containing):
    - Preserve use for operating rooms (ORs), NPO (nothing by mouth) patients, and other clear clinical indications (hemorrhage, sepsis, diabetic ketoacidosis, etc.).
  - Planning: Identify impacted fluids with critical uses or special criteria and limit access to them by removing stock from most areas, implementing ordering restrictions, and other measures.

### Communication & Situational Awareness Strategies

Communication strategies that may be considered to provide ongoing situational awareness on the supply impacts and your organization’s conservation efforts:

- Strategy 1: Engage clinical teams
  - Details: Provide education and training to healthcare providers via email, websites, webinars, town halls, departmental meetings, internal departmental apps and other mechanisms on managing fluid restrictions, medication and therapeutic changes and the potential risks.
  - Planning: Regularly update all staff on the status of the shortage and any changes to treatment protocols. Consider adding shift change multidisciplinary huddles to brief providers and nursing staff on current situation and changes.

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- Strategy 2: Increase signage
  - Details: While general communications are necessary, increased signage at the location of supply can serve as a successful added reminder for clinicians ordering or administering IV fluids.
  - Planning: Consider explicit signs noting, “this is a product of a critical shortage” as it can become routine to grab for what is normally abundant.
  
- Strategy 3: Continue monitoring expiring supply
  - Details: Consider monitoring supply that may be expiring in the next couple of months.
  - Planning: Ensure first in, first out (FIFO) protocols are rigorously adhered to.
  
- Strategy 4: Align across departments on management of ordering
  - Details: Continue to work with departments to continuously monitor the inventory and demand situation to determine assess if central management of ordering or product usage is needed.
    - Whenever possible, improve local storage opportunities in departments.
  - Planning: Maintain communication of the extent of conservation efforts (i.e., conservation vs. rationing vs. crisis standards of care).
    - If helpful, consider surveying across ambulatory sites and requesting facilitation.