



## **SMFM Alert: Intravenous Fluid Shortage**

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### **Background:**

Healthcare professionals and institutions should be aware of a probable intravenous (IV) fluid supply shortage. This initial disruption is due to the impact of Hurricane Helene on the North Carolina plant of [Baxter International Inc](#), the company that produces IV fluid products for many hospitals.<sup>1-3</sup> The US Department of Health and Human Services (HHS) is working closely with the Baxter facility and other partners to mitigate this supply chain disruption, as addressed in the October 9, 2024 [Letter to Health Care Leaders and Stakeholders](#) from Secretary Becerra. In particular, HHS has coordinated with medical manufacturer B. Braun Medical, which also supplies IV bags, to move its inventory from its plant in Florida out of the path of Hurricane Milton.<sup>4</sup> Additionally, the Food and Drug Administration (FDA) is working to [temporarily import some products](#) in shortage to help meet patient needs. The FDA has also encouraged manufacturers to submit data to support product shelf-life extension for expedited review.

This Alert provides opportunities for IV fluid conservation efforts in this scenario and future potential shortages. Please note that these recommendations are temporary and in an emergent setting. SMFM will continue to monitor this situation and provide updated information as needed.

### **Systems-based practice:**

- Take stock of inventory within pharmacy. All health systems caring for obstetrical patients should have a clinical obstetric representative in the systems discussions regarding allocation of resources.
- Use oral hydration strategies when possible.
- Regularly assess IV fluid usage and supply for each patient and unit during safety huddles and sign-outs.

- Consider whether maintenance or bolus IV fluids are medically necessary prior to administration.

#### **Electronic medical record (EMR) systems:**

- Consider instituting daily automated reminders via EMR during periods of shortage for situational awareness of all clinicians.
- Consider restricting fluid orders to a prespecified time limit (e.g. 24-48 hours), and requiring manual reorders if continued IV fluid is necessary.
- Consider automating best practice advisories (BPAs) when orders for medications given in IV fluids are being placed, with suggestions for potential oral alternatives.
- Consider building reports for each service that include patients with active IV fluid orders that can be viewed by clinical leadership in order to track compliance with recommended strategies.

#### **Multidisciplinary approach:**

- Empower nursing teams to evaluate IV fluid needs regularly and prior to starting new IV fluid bags.
- Ensure nursing teams receive in-service training regarding IV push medications and duration of push for each type of medication (typically 2-3 minutes for most medications).

#### **Cesarean delivery:**

- Consider oral hydration with clear electrolyte containing fluids until two hours prior to surgery.
- Consider early initiation of oral hydration after delivery per institutional Enhanced Recovery after Surgery/Cesarean protocols.

#### **Labor:**

- Consider oral hydration.
- Delayed gastric emptying and higher rates of nausea and vomiting may be present in active labor, so IV fluids may be initiated.
- Discuss protocols for pre-epidural IV fluid bolus with your obstetric anesthesiology colleagues.
- Discuss protocols for amnioinfusion with clinical obstetric clinician and nursing teams.

### **Electrolyte management:**

- In patients who require careful electrolyte management, such as patients at risk of arrhythmia, consider electrolyte-containing oral fluids as well as oral repletion strategies.

### **Antibiotics:**

- Administer medications orally when possible, especially when being prescribed after delivery.
- Administer medications by IV push rather than by IV bag/piggyback when possible.
- For Group B Streptococcus (GBS) prophylaxis, consider a **temporary** transition to the use of cefazolin as a first-line agent instead of penicillin, with a plan to rapidly change back once this shortage is over.
  - Penicillin requires substantial use of IV fluids given its more frequent dosing and the common need to mix and prepare in the hospital pharmacy before administration.
  - Cefazolin can be given via IV push if needed.
- The following medications commonly used in obstetrical units **should not be given via intravenous push (IVP)**:
  - Azithromycin
  - Ciprofloxacin
  - Clindamycin – due to risk of cardiopulmonary arrest and hypotension
  - Doxycycline
  - Erythromycin
  - Metronidazole – only available in ready-to-use IV bags, so no alternate route of administration is available
  - Penicillin G
  - Piperacillin / Tazobactam – mildly hyperosmolar, but in extreme cases or shortage, can be considered as IVP
  - Trimethoprim-sulfamethoxazole
  - Vancomycin

### **Uterotonics:**

- Postpartum oxytocin can be given as intramuscular administration instead of intravenous if needed.
- Early consideration for mechanical or vacuum-induced tamponade devices in settings of suspected uterine atony.

**Obstetric emergencies:**

- Emergency management should remain unchanged in setting of hemorrhage, sepsis, eclampsia, amniotic fluid embolism, where IV fluids may be lifesaving.

## References:

1. Baxter International. Baxter Provides Update on North Cove, N.C., Facility and Hurricane Helene Relief Plans for Community. Baxter Newsroom [Internet]. Deerfield, IL. 2024 September 30. Available from: <https://www.baxter.com/baxter-newsroom/baxter-provides-update-north-cove-nc-facility-and-hurricane-helene-relief-plans>
2. Loveless BJ & Fattah M. Hospitals take steps to conserve IV fluid supply after Helene strikes critical factory. NBC News [Internet]. 2024 October 3. Available from: <https://www.nbcnews.com/health/health-news/hospitals-take-steps-conserve-iv-fluid-supply-helene-strikes-critical-rcna173861>
3. Malhi S & Ortega L. IV fluid supplies dwindle as Helene closes N.C. manufacturing plant. Washington Post [Internet]. 2024 October 3. Available from: <https://www.washingtonpost.com/health/2024/10/03/iv-fluid-supply-disruption-hurricane-helene/>
4. Perrone M. Officials work to protect IV supplies in Florida after disruptions at North Carolina plant. ABC News [Internet]. 2024 October 9. Available from: <https://abcnews.go.com/US/wireStory/officials-work-protect-iv-supplies-florida-after-disruptions-114658725>

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