

References

- Zhao X, Qin Q, Zhang X. [Outcomes of High-Flow Nasal Cannula Vs. Nasal Continuous Positive Airway Pressure in Young Children With Respiratory Distress: A Systematic Review and Meta-Analysis](#). *Front Pediatr*. 2021 Nov 5;9:759297
- Gates RM, Haynes KE, Rehder KJ, Zimmerman KO, Rotta AT, Miller AG. [High-Flow Nasal Cannula in Pediatric Critical Asthma](#). *Respir Care*. 2021 Aug;66(8):1240-1246
- Russi BW, Lew A, McKinley SD, Morrison JM, Sochet AA. [High-flow nasal cannula and bi-level positive airway pressure for pediatric status asthmaticus: a single center, retrospective descriptive and comparative cohort study](#). *J Asthma*. 2021; Jan 15:1-13.
- Ruangsomboon O, Limsuwat C, Praphruetkit N, Monsomboon A, Chakorn T. [Nasal High-flow Oxygen Versus Conventional Oxygen Therapy for Acute Severe Asthma Patients: A Pilot Randomized Controlled Trial](#). *Acad Emerg Med*. 2021 May;28(5):530-541.

Rural Medicine: Delivery on a Plane

Aisha Khatib and Vanessa Cardy

Case: On a flight to Uganda a call goes out, “Is there a doctor on board?” Dr. Khatib responds and finds a woman is delivering a baby in the back of the plane. The patient is mid-delivery and the baby comes out and cries immediately.

- Things a responding physician might need for a delivery in an austere environment: clamp, scissors, and blankets.
- Ask for the on-board medical kit.
 - In this case, there was a delivery kit on the plane that included clamp, scissors, and also included oxytocin.
- Priorities:
 - Warm the baby using airline blankets.
 - Clamp the cord and cut it. A shoestring can be used as a stand-in.
 - Deliver the placenta and inspect it (ask for a plastic bag to put it in).
 - Perform uterine massage to help stop bleeding.
 - Place a pad for the bleeding.
 - Help promote breastfeeding.
 - Continue monitoring. Assess vitals every 30 minutes.
- Giving the oxytocin can reduce risk of postpartum hemorrhage (PPH).
 - Postpartum hemorrhage is defined as a 50% change in HR, BP or 500ml-1000mL of bleeding.

- A full pad is probably about 250mL.
- Acetaminophen for uterine cramping is appropriate.
- In-flight medical emergencies happen at a frequency of about 1 in 600 flights.
- Say your thought process out loud - crowdsource when needed. Having extra resources is helpful.

Bleeding AV Shunt

Britt Guest and Nathaniel Coggins

Case: A 80-year-old woman was found down with an AV fistula. There was lots of blood at the scene, but no active bleeding when EMS arrived. The patient's GCS was 6 and she was being bagged. There was no obtainable blood pressure en route to ED. In ED, the patient's vitals were: BP 60/40 mmHg, heart rate 115 bpm, and O2 sat 92% with BVM respirations. Blood, platelets and FFP were given. With resuscitation, pulsatile bleeding begins at the fistula site.

- AV fistulas are high-flow, low-pressure systems.
- Typically bleeding can be controlled with direct pressure.
 - Options:
 - Applying pressure proximal and distal to the defect.
 - Inflating BP cuff over the systolic pressure.
 - Applying tourniquet.
- The goal is to apply the minimal amount of pressure necessary to stop bleeding.
- Alternate options to control bleeding:
 - Topical hemostatic agents (eg., TXA or gelfoam) combined with pressure.
 - Systemic medications
 - DDAVP: might help platelet function.
 - Protamine: may be useful if a patient recently received heparin.
 - TXA: no data to guide use.
- Defect repair
 - A purse string or figure-of-eight stitch can be placed at the bedside.
 - It will be easier to suture if holding pressure above and below the site to clear the field.
 - Vascular surgery may take the patient to the operating room for repair.