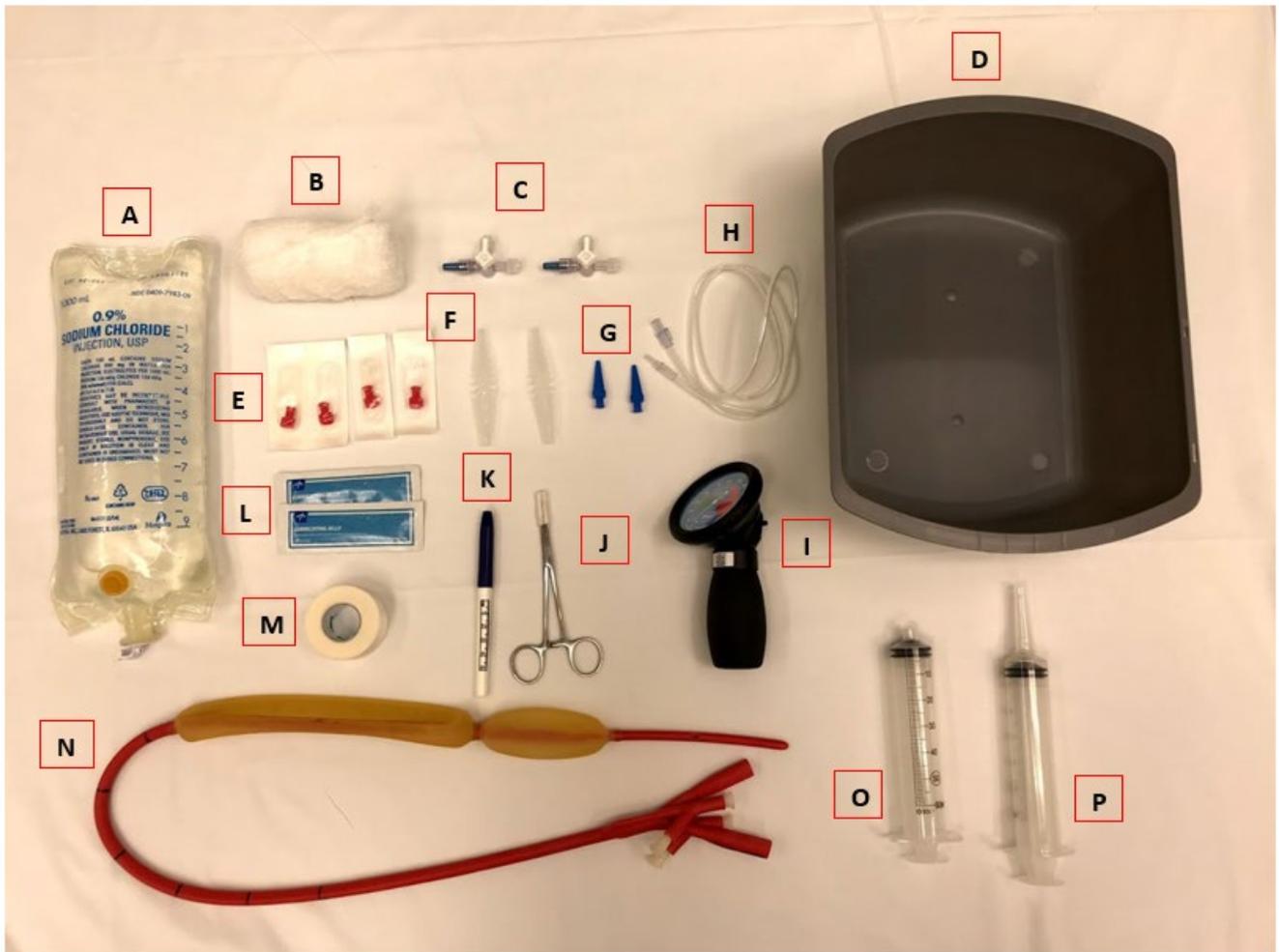


Minnesota Tube Kit

Label on Photo	Equipment	Number of Items	Supply ID Number	ED Supply Center Location
A	1L normal saline bag	1	N/A	PIXIS
B	Kerlix rolled gauze	1	20	11 H
C	3-way stopcock	2	1412	21 B
D	Basin with water	1	5630	27 E
E	Dual Luer Lock cap	4	5163	13 F
F	Christmas tree adaptor for suction	2	1181	16 G
G	Christmas-tree-to-Luer-Lock converter	2	851	17 A
H	Posey Cufflator connector tubing	1		
I	8199 Posey Cufflator™ Endotracheal Tube Inflator and Manometer	1	Stays in Kit REUSABLE	Stays in Kit REUSABLE
J	Kelly clamp with tape over ends	1	421	21 C
K	Marking pen	1	8773	23 E
L	Sterile lube packet	3	78	11 A
M	Roll of silk tape	1	286	11 D
N	Minnesota tube	1	432	3 D
O	60 cc syringe with Luer Lock tip	1	271	18 A
P	60 cc syringe with catheter tip	1	246	18 A



Minnesota Tube Kit

1. **Resuscitate and intubate.** After intubation, elevate head of bed to 45 degrees. Ensure adequate vascular access. Consider placing an arterial line and activating massive transfusion protocol.
2. **Remove Minnesota tube plugs.** Remove the white plugs from the ends of the balloon ports (STOMACH BALLOON port and ESOPHAGUS BALLOON port). A hemostat may be needed.
3. **Add Christmas-tree-to-Luer-Lock converters and stopcocks.** Place a Christmas-tree-to-Luer-Lock converter and a 3-way stopcock into each balloon port.
4. **Check for air leaks.** Check gastric and esophageal balloons for leaks by inflating the balloons with air in a basin filled with water and looking for bubbles.
5. **Insert Minnesota tube.** Fully deflate both balloons prior to insertion. Lubricate the tip and balloons of the Minnesota tube with sterile gel. Pull up on the mandible of the patient and insert the balloon through the mouth into the stomach (like an orogastric tube). Insert the tube to 50 cm at the lips. McGill forceps and a laryngoscope can be used to help insert the tube. Alternatively, the tube may be inserted intranasally (like a nasogastric tube).
6. **Partially inflate gastric balloon.** Inflate the STOMACH BALLOON with 50 cc of air. Check tube placement before fully inflating.
7. **Check tube placement.** Push air through GASTRIC ASPIRATION port using the 60 cc syringe with catheter tip while auscultating over the stomach. Ensure bowel sounds are heard. Obtain a portable chest x-ray to confirm balloon placement in the stomach.
8. **Fully inflate gastric balloon.** Fully inflate the STOMACH BALLOON with air (up to 500 cc in total). Turn the stopcock OFF and apply Luer Lock caps to the open ports on the 3-way stopcock.
9. **Apply traction.** Using a slipknot, tie one end of the Kerlix rolled gauze to the proximal end of the Minnesota tube just distal to all of the ports. Tie the other end of the gauze to a 1L bag of saline. Apply 1 kg of traction to the Minnesota tube by hanging the saline bag over an IV pole.
10. **Suction the stomach.** Attach Christmas tree adapter to the GASTRIC ASPIRATION port and the suction catheter. Suction the stomach using the GASTRIC ASPIRATION port. After suctioning, clamp the GASTRIC ASPIRATION port with Kelly clamp with tape over the ends.
11. **Suction and irrigate the esophagus.** Attach Christmas tree adapter to the ESOPHAGUS ASPIRATION port and the suction catheter. Suction and irrigate esophagus using the ESOPHAGUS ASPIRATION port to check for continued bleeding. If the bleeding is controlled STOP HERE.
12. **ONLY if bleeding persists...** Using connector tubing, attach insufflating manometer to 3-way stopcock on ESOPHAGUS BALLOON port. Inflate ESOPHAGUS BALLOON to a max of 30-45 mmHg. This usually requires a small volume of air. Turn the stopcock OFF and apply Luer Lock caps to the open ports on the 3-way stopcock.
13. **Suction the esophagus.** Suction and irrigate the esophagus using the ESOPHAGUS ASPIRATION port.
14. **Confirm tube placement and secure tube.** You may use an additional ETT holder to secure the Minnesota tube. Obtain a repeat portable chest x-ray. Mark the tube at the lips to monitor for tube migration.

Minnesota Tube Kit and Minnesota Tube Instructions

Sam Parnell, MD and Charles Lei, MD

May 2019