EPIC eNewsletter
Keeping you up to date.

Upcoming Events
See EPIC.arizona.edu for more details

**EPIC Highlights**

- **Pediatric ventilation rate timers (VRTs)** are now available. They will be supplied with the pediatric bags supplied through the generosity of the Ramsey Foundation and Rural Metro Corp. Adult and Pediatric VRTs differ in rate per EPIC guidelines. It is very important to distinguish the two. Pediatric VRTs are distributed from the EPIC team with red stickers (see right).

- EPIC refresher course is now available at www.epic.arizona.edu/training. Hypoxia and hypotension are common occurrences in TBI, and preventing and treating them is crucial to good TBI care. This one-hour refresher course qualifies for CE credit and is vital in making sure EPIC training guidelines stay in the forefront of our minds.

**Remember: No H-Bombs!**

**EPIC Patient:** ANYONE who had an altered LOC and any kind of trauma MOI

**Avoid the TBI H-Bombs:**
- Hypoxia-high flow \( O_2 \) immediately
- Hypotension-fluids if B/P low or falling
- Hyperventilation-\( EtCO_2 \) target 40 (range 35-45)

**Caution!** Watch for falling:
- Systolic Blood Pressure
- \( O_2 \) Saturation
- \( EtCO_2 \)

**Use Ventilation Rate Timers with SMART BAGS:**
- Children (ages 2-14) – 20 breaths per minute
- Adults (ages 15+) – 10 breaths per minute

**Brain Fact:** The average cost per case of medical care for TBI patients in AZ:
- Moderate TBI: $62,000
- Severe TBI: $102,000
- Ominous TBI: $155,000
Flow-Controlled Bags (SMART BAGs)

The SMART BAG is not “just another BVM.” It is a different way to ventilate patients, using a flow limiter. Squeeze the bag hard, and it will resist. Squeeze the bag easily, and it will ventilate like a normal bag. This resistance can be mistaken for poor lung compliance. If a member of the team does not recognize this important difference, it could be mistaken for a lung problem, including tension pneumothorax. If a patient is hard to ventilate, first slow rate and force of ventilations down. If this does not improve compliance, watch the bag neck to see if the piston is engaging. If it is, you are bagging too forcefully. If bagging is not made easier with these steps, it could be a problem with your patient. Reassess your patient and lung sounds. When transitioning care to the Trauma Team, either bag for them, or demonstrate the bag to the person bagging and to the team. Make sure the Trauma Surgeon knows that the bag is designed to make hyperventilation more difficult, and that it will help to limit force and rate of ventilation.

SMART Bag, Adult with Inflatable Mask and timing light
Henry Schein #: 499-9718
O-Two #: 01BM3201-MO-TL-CS
Packaging: 6/Case
EPIC Discount Price: $97.50 per case

SMART Bag, Child with Inflatable Mask and timing light
Henry Schein #: 499-9719
O-Two #: 01BM3211-MO-TL-CS
Packaging: 6/Case
EPIC Discount Price: $97.50 per case

To receive EPIC Discount Price, contact Ryan Clark at Henry Schein: Ryan.Clark@HenrySchein.com

Initial supply of smart bags and ventilation rate timers available for EPIC certified agencies thanks to the Ramsey Foundation & the Rural Metro Corporation.

NEVER HYPERVENTILATE

Hyperventilation is the most common EMS sin. We ALL hyperventilate patients if we aren’t constantly vigilant and refuse to allow it. Investing in pressure control bags (smart bags) complete with ventilation rate timers will help to minimize the automatic tendency of people to inadvertently hyperventilate, which can at least double mortality in TBI patients.

SMART BAGs now available at special pricing for EPIC-certified agencies. See above.
Should PEEP be used on intubated TBI patients?

PEEP may have value on other patients, but we strongly recommend against its use for TBI patients because:

- It increases intrathoracic pressure
- It decreases venous return
- It increases JVP and may increase ICP
- It exacerbates shock and causes other problems
- Even in small amounts (3-5cm H₂O) it may have negative effects even though it is not apparent
- PEEP is usually only indicated later in care after medical, surgical and cardiovascular stabilization have created a good B/P and an adequate cerebral perfusion pressure.

**If your agency is not listed, please email us:**
crystalsilva@email.arizona.edu

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**EPIC Certified Agencies**

A huge THANK YOU to the following agencies for their commitment to improving both the survival and neurological outcome of TBI patients in Arizona!

- Air Evac
- American ComTrans
- American Ambulance
- Apache Junction Fire District
- Arivaca Fire District
- Arizona City Fire District
- Avondale Fire Department
- Avra Valley Fire District
- Black Canyon Fire District
- Blue Ridge Fire Department
- Buckeye Fire Department
- Bullhead City Fire Department
- Camp Navajo Fire Department
- Camp Verde Fire District
- Canyon State Ambulance Inc. (PMT)
- Carefree Fire Department (Rural Metro)
- Casa Grande Fire Department
- Chandler Fire Department
- Clarkdale Fire Department
- Cottonwood Fire Department
- Department of Public Safety
- El Mirage
- Eloy Fire Department
- Flagstaff Fire Department
- Fort McDowell Fire Department
- Fountain Hills/Rural Metro FD
- Gilbert Fire Department
- Glendale Community College
- Glendale Fire Department
- Goodyear Fire Department
- Guardian Air Transport
- Guardian Medical Transport
- Highlands Fire District
- Kearny Fire & EMS
- LifeLine Ambulance
- LifeNet – Southern Arizona
- Lifestar Ambulance
- Maricopa County Sheriff’s Office
- Maricopa Fire Department
- Mesa Fire/Medical Department
- Mount Lemmon Fire District
- Native Air
- Nogales Fire Department
- Nogales Suburban Fire
- Northwest Fire District
- Patagonia Fire & Rescue
- Peoria Fire Department
- Phoenix Fire Department
- Pine-Strawberry Fire District
- PMT Ambulance
- Ponderosa Fire Department
- Portal Fire and Rescue
- Queen Creek Fire Department
- Regional Fire and Rescue
- Rio Rico Fire District
- Rio Verde Fire Department
- Rural/Metro Corporation
- San Simon Fire Department
- Scottsdale Fire Department
- Sedona Fire Department
- Sierra Vista Fire Department
- Sonoita Elgin Fire Department
- Southwest Ambulance
- St. David Volunteer Fire Department
- Summit Fire Department
- Sun City Fire Department
- Sun City West Fire Department
- Sun Lakes Fire Department
- Surprise Fire Department
- Tanque Verde Valley Fire District
- Tubac Fire District
- Tucson Fire Department
- Verde Valley Ambulance
- Verde Valley Fire District
- Wilderness Medics