EPIC eNews

Welcome to the EPIC eNewsletter! Keeping you up to date.

Upcoming Events

See EPIC.arizona.edu for more details

Dec. 13 EPIC Provider & Master Trainer Course
UA College of Medicine-Phoenix
0800-0900 Provider Training
0800-1100 Master Training
See website for more details

TBI Severity is Hard to Assess Early in Care

Q. Is it possible to predict TBI severity based on early EMS or Trauma Center GCS scores?

A. No. Based on initial hospital GCS score, **only 27%** of moderate to severe TBI patients have initial hospital GCS scores of 12 or less. (Note: Initial EMS GCS is no better at predicting TBI)

This means that almost three quarters of patients with moderate to severe TBI won't be obvious early in care.

Q. So, they'll at least have an altered GCS of some degree, right? Or, put another way, what percentage of patients have normal GCS scores (4/5/6=15) on trauma center arrival, but end up having a moderate to severe TBI?

A. **Over HALF of trauma patients!!! 52%** look fine initially, with normal GCS (4/5/6=15), but are diagnosed with moderate to severe TBI before hospital discharge.
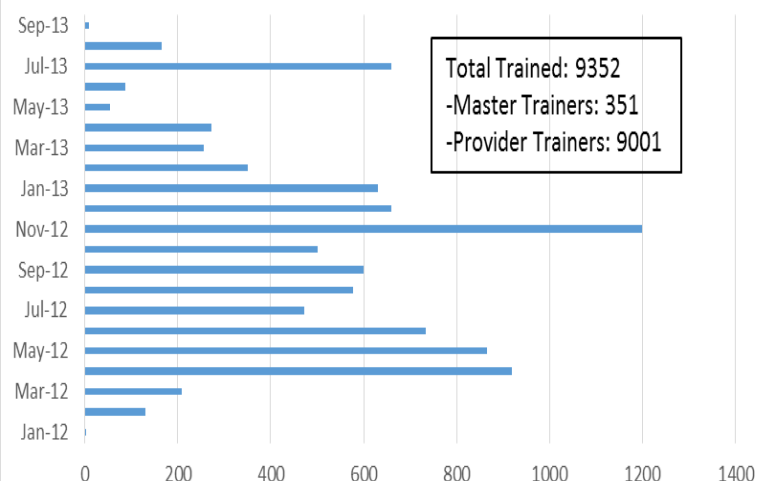
GOAL: Treat every trauma patient using EPIC guidelines, and you will help prevent secondary injury in all of them.

Source: ASTR and EPIC database, similar findings reported in
Emerg Med J 2013;30:876 doi:10.1136/emermed-2013-203113.24

EPIC Highlights

- Refresher course available on website for CE Credit: www.epic.arizona.edu/training

- Efforts have been underway to ensure that all agencies that are EPIC Certified have received their FREE supply of BVMs and Timers. Over $22,000 in free supplies has been distributed. If you are a certified agency, and have *not* received bags, please contact: crystalsilva@email.arizona.edu

- **EPIC Hospital Training is underway**: Master Trainers from Native Air and LifeNet have began the process to take EPIC training to In-Hospital Providers. St. Luke's and Scottsdale Hospitals are also taking the training on themselves. This should help to streamline care transition in the ED.

- **Looking for EPIC TBI success stories:** EPIC Guidelines have been implemented at 155 Arizona EMS Agencies so far. We are looking for success stories that highlight the payoff of good EPIC Care. If you know of a patient that was treated by your EPIC-Trained agency and is recovering well, please let us know (bbarnhart@medadmin.arizona.edu). We want to recognize the Survivors of TBI and the providers who made a difference in their lives. Thank you for your efforts!

EPIC-Trained EMS Providers

Total Trained: 9352
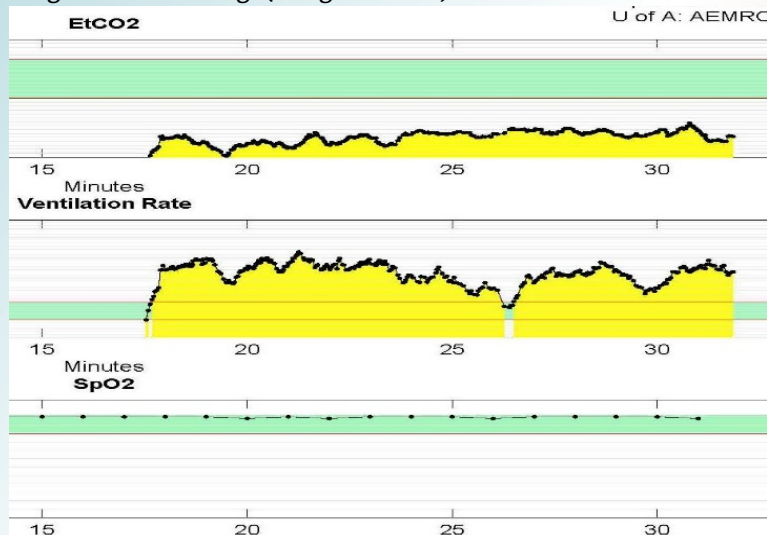-Master Trainers: 351
-Provider Trainers: 9001

BEWARE OF ETCO2 MONITORING THAT ISN'T!!

Early findings in the EPIC Project:

- Many systems using ETCO2 monitors are simply using them to confirm tube placement….and then nicely document that they are <u>inadvertently hyperventilating</u>!!! (see graph at right)

  - If you have ETCO2 Monitoring: Use it! Check it! QI your work-see how you did! Report it! Ask about it! Review your waveforms!

  - Stay vigilant. 100% of providers will hyperventilate unless they watch EACH and EVERY breath.

  - Work with hospital staff when you turn over care. They may not be familiar with EPIC.

This graph shows an <u>actual</u> EPIC patient with confirmed RRs of up to 30bpm and ETCO2 as low as 20mmHg (and never above 28mmHg). ETCO2 this low causes a profound decrease in cerebral blood flow and results in neuronal ischemia and death. Remember the RR guideline in adults is 10bpm and the ETCO2 target is 40mmHg (range 35-45).

Do not let ETCO2 monitoring be a tool that simply documents that you're hyperventilating TBI patients!!!

Question from the Field

Q. Okay, so if you have a pediatric trauma patient who has a possible TBI, does the EPIC guideline of treating glucose under 70 override the ALOC offline protocol for treating sugar under 50? Is this going to be the case in all trauma or only trauma when a TBI is in question?
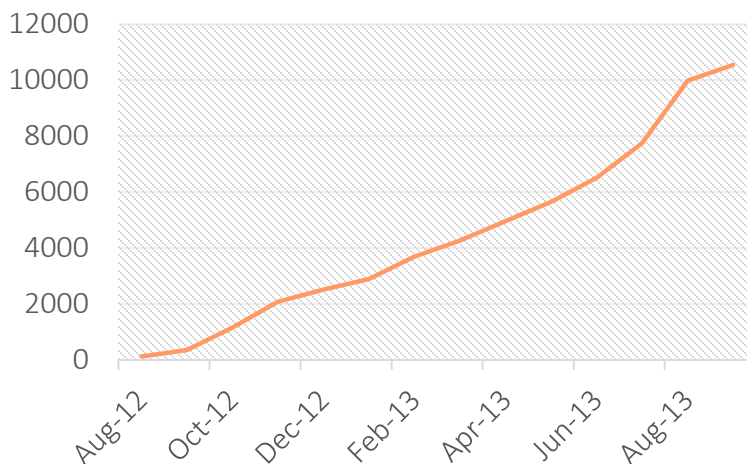
A. Great question! The correct EPIC management is to make sure hypoglycemia is treated. We used the number specified by the Brain Trauma Foundation based upon the literature, but if an agency has a specific protocol for managing hypoglycemia, that level is fine. The ideal glucose threshold level (50, 60, 70, 80 or some other number) in TBI for any age group is not currently known, but it is known that significant hypoglycemia is bad.

So, should EPIC care be given only in possible TBI or in all trauma?

A. All trauma patients should be treated per EPIC guidelines, since we find a lot of patients look fine in the field and deteriorate after arrival at the hospital. TBI patients are hard to reliably identify in the field (see page 1 for more details on this).

The EPIC Project is a two-phase project: training EMS agencies in EPIC Guidelines for TBI patient care, and collecting data from these agencies so we can track the success of EPIC via comparison of "before-EPIC care" outcomes and "after-EPIC care" outcomes. As such, data collection is an integral part of EPIC. Thank you to those agencies actively sharing patient chart records (PCRs).

PCRs Entered

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
Buckeye Valley Fire District
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
Daisy Mountain Fire Department
Department of Public Safety
El Mirage Fire Department
Eloy Fire Department
Flagstaff Fire Department
Fort McDowell Fire Department
Fountain Hills/Rural Metro FD
Gilbert Fire Department
Glendale Community College
Glendale Fire Department

Globe Fire Department
Golden Valley Fire District
Golder Ranch Fire District
Goodyear Fire Department
Green Valley Fire Department
Guardian Air Transport
Guardian Medical Transport
Highlands Fire District
Holbrook EMS
Huachuca City Fire Department
Joseph City Fire Department
Kearny Fire & EMS
LifeLine Ambulance
LifeNet – Southern Arizona
Lifestar Ambulance
Maricopa County Sheriff's Office
Maricopa Fire Department
Mayer Fire Department
Mesa Fire/Medical Department
Montezuma-Rimrock Fire Department
Mount Lemmon Fire District
Native Air
Navajo Nation EMS
Nogales Fire Department
Nogales Suburban Fire
Northwest Fire District
Patagonia Fire & Rescue
Payson Fire Department
Peoria Fire Department
Phoenix Fire Department
Picture Rocks Fire District
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
Sunnyside Fire Department
Surprise Fire Department
Tanque Verde Valley Fire District
Tempe Fire Department
Tombstone Volunteer Fire Department
Tonopah Valley Fire Department
Tri-Valley Ambulance
Tubac Fire District
Tucson Fire Department
Verde Valley Ambulance
Verde Valley Fire District
Wilderness Medics
Yuma Fire Department

Thank you to the Ramsey Social Justice Foundation & Rural/Metro Corporation, for supplying Arizona's EPIC-Certified Agencies with free Pressure/Flow-Controlled Bags & Ventilation Rate Timers.

SMARTBAGs Distributed

Chart showing SMARTBAGs Distributed from Sep-12 to Sep-13, rising from near 0 to approximately 1400. Y-axis scale: 0, 200, 400, 600, 800, 1000, 1200, 1400, 1600.