

# Education and Quality Issues in EMS

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# Initial Provider Education

- ◆ Nowhere is quality education more important than in rural services with low call volumes
- ◆ Most EMS education in MT is provided by people with little field care experience and little, if any, training/experience as educators
- ◆ Little support, in terms of instructor training, educational modules, training equipment or medical oversight is provided

# Continuing Education

- ◆ The medical knowledge base changes constantly, making continuing education (CE) vitally important
- ◆ Most CE is provided by the same people providing the initial training, frequently using outdated, recycled curricula and materials
- ◆ CE should not be “canned”, but should be tailored to meet care deficiencies identified through local and system-wide Performance Improvement (PI) processes

# Performance Improvement

- ◆ Implementation of the PI plan from the American College of Surgeons (national group that verifies Trauma Centers) has led to significant improvements in care at the Level II Trauma Centers in MT
- ◆ Most EMS agencies have neither the knowledge nor resources to implement such a program
- ◆ There is little regional or state PI for EMS in MT

# Montana Preventable Mortality Studies

- ◆ Showed an alarmingly high percentage of trauma deaths in MT could have been prevented had care met national standards
- ◆ Educational efforts improved the results over a period of years, but our percentage of preventable deaths is still way too high

# Suggestions for Improvement from NHTSA Assessment

- ◆ EMSTS should “improve instructor qualifications, expand training equipment and ensure medical oversight of training and education programs”
- ◆ EMSTS should “explore training options, such as distance learning, CDs and interactive DVDs, training equipment caches and web-based training”
- ◆ EMSTS should “develop and fund mobile training resources such as the mobile trauma training unit and the STARS mobile education program”

# Trauma Case Review

**Event:** 62 year old male restrained driver T-boned on passenger side at highway speeds -  
Extrication time >20 minutes

Loss of consciousness ~ 7 minutes

**EMS:** Oxygen provided per non-rebreather mask during extrication process

IV started with LR infusing

Full spinal immobilization

# Facility #1

Arrive 6:03 PM

P 100, R 20, BP 78/31, GCS 14

While at first facility, SBP range 66-99

Given 4 liters crystalloid and 2 units blood

7:10 PM: Helicopter to St. Pat's with 2 more units  
blood given enroute

# ED

Arrive 7:35 PM - P 91, R 35, BP 63/42, GCS 14

DPL negative

INR 1.9

7:50 PM: To CT

8:15 PM: Central line placed

8:30 PM: Lacerations sutured

BP >100, platelets 38,000, INR 2.1

Totals: 6 liters crystalloid, 8 units blood, 4 units  
fresh frozen plasma, 6 of platelets

9:00 PM: To Angiography

# Injuries

- ◆ Unstable pelvis injury involving a comminuted impacted sacral injury with displaced inferior superior rami fractures bilaterally and rotational instability
- ◆ Displaced intertrochanteric fracture of the left hip
- ◆ Active extravasation in pelvis from both internal iliacs
- ◆ Bleeding in psoas muscle on the right and into abdominal wall/chest wall above the liver in the region of the internal mammary artery
- ◆ Significant retroperitoneal and mesenteric edema

# Angiography Suite

Intubated prior to being placed on procedure table

Thoracic and abdominal aortogram

Pelvic arteriogram

Gelfoam slurry embolization was performed in the anterior division of the right internal iliac artery and in the anterior and posterior divisions of the left internal iliac artery

Flown to Harborview Medical Center in Seattle at  
10:18 PM

# Outcome

Returned to home community with minimal disability, able to resume previous employment after work with Rehabilitation specialists

# Success Dependent Upon...

- ◆ EMS rapidly stabilizing and transporting patient
- ◆ First facility supporting circulatory status and rapidly initiating transport to higher level of care
- ◆ Level II Trauma Center utilizing angiography to stop active bleeding, then rapidly initiating transport to higher level of care for definitive treatment of fractures
- ◆ Reintroduction to home community with support from Rehabilitation specialists