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- Most CE is provided by the same people providing the initial training, frequently using outdated, recycled curricula and materials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”
**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
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
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