"Over-reliance on one's own experience

allows one to make

the same mistakes

with greater confidence."

~Anonymous

To Board or Not to Board?
spinal immobilization for the 21st century

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Objectives

- Describe current spinal immobilization practices
- Describe the history of spinal immobilization
- Express the basics of NAEMSP's spinal immobilization policy statement
- Explain the value of selective spinal immobilization
- Discuss special considerations in spinal immobilization

Motorcycle Accident

- 35 year old female motorcycle rider
- Multi-vehicle MVC in the rain, highway speed
- Motorcycle clipped by SUV and careened into highway divider
- Left elbow & shoulder, upper back pain
- Helmet cracked and pt. semiconscious

Should the patient be immobilized?
Why or Why not?

Friday Night Lights

- 16 year old male football player
- Made a spear tackle during the game and remains down
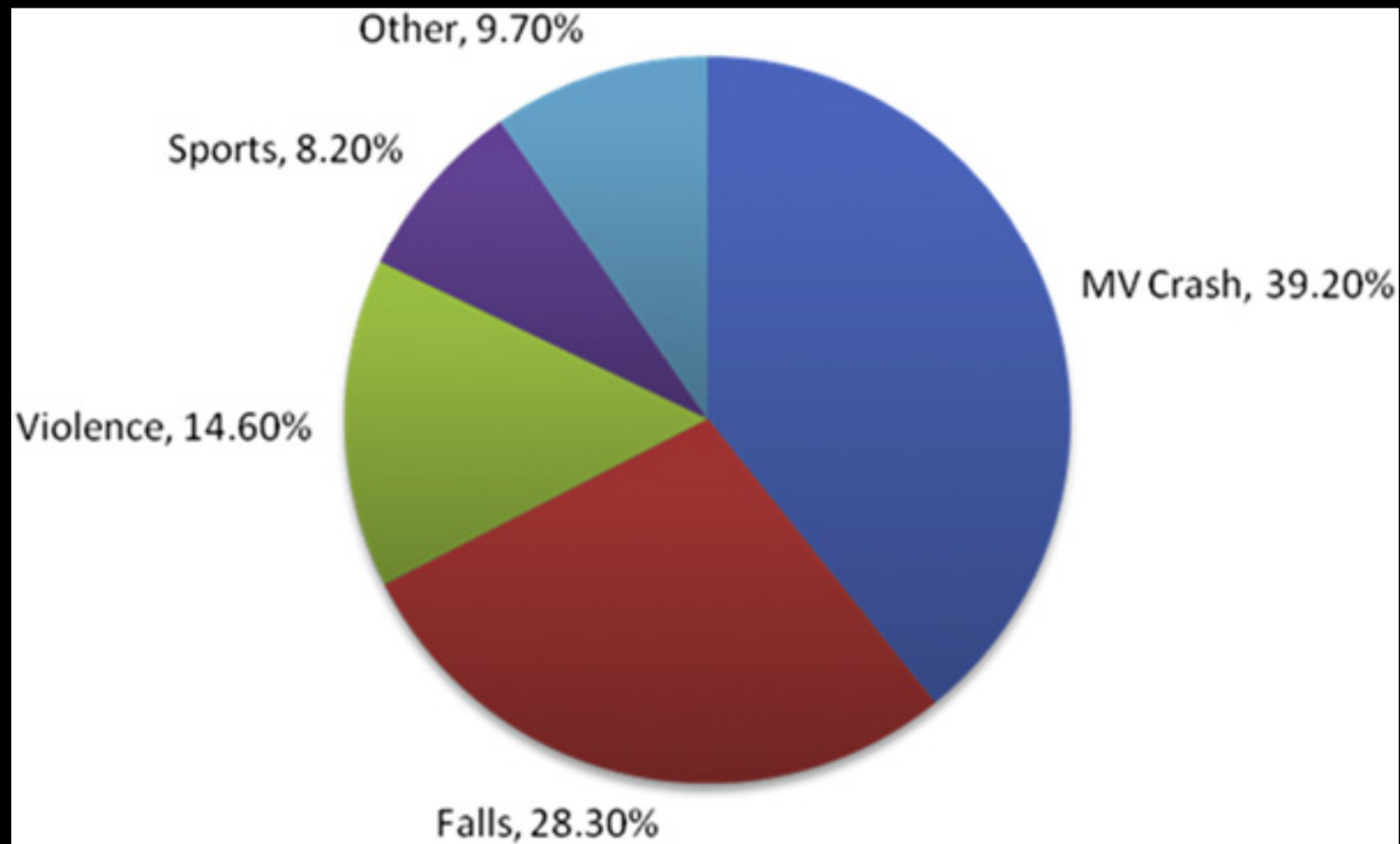- Assessment reveals mild posterior neck tenderness

Should the patient be immobilized?
Why or Why not?

Fall from atop a helicopter

- 26 y/o WM slipped and fell 20+ ft. off a UH-60 Blackhawk helicopter
- Able to stand at scene without focal deficits
- Abrasions and lacerations, holding left shoulder, rubbing the back of his neck
- Bagram AB, Afghanistan

Immobilize?

Causes of Spinal Cord Injury (SCI)

2005-2012

Data from the NSCISC 2012 Spinal Cord injury Facts and Figures at a Glance. (February 2012) National Spinal Cord Injury Statistical Center. https://www.nscisc.uab.edu. Accessed Aug 5, 2013

So What?

- In the US
  - 12,000 new cases/yr

  - Annual cost of SCI morbidity
    - Over $300,000 the first year
    - Over $41,000 annually till death

  - Life span after SCI shortened 10-15 yrs

Current Practice

- PHTLS

- NAEMSP Policy Statement 2013

- Sample from local level (Sedgwick Cty, KS)

Board them all ⟵————————————————⟶ **No boarding**

Spinal Immobilization

⊙ To facilitate extrication

⊙ To facilitate transload

⊙ To immobilize for transport

⊙ Generalized to all trauma patients

⊙ C collar + long board + blocks

Board them all ⟷ **No boarding**

Adverse Effects of Spinal Immobilization

- Prolonged Scene Time
- Pt. Compliance
- Nausea/aspiration
- Pain/unhappiness
- Impact on MD workup
- Pressure Ulcers
- Impaired ventilation
- Increased ICP

Spinal Motion Restriction

- New term, new mindset?

- Does it have to be all or nothing?

- How will we address initial education, recurrent training, and field proficiency?

Selective Spinal Immobilization

The use of clinical criteria by prehospital care providers for clearance of the cervical spine

This is NOT prehospital spine clearance!

Assessment and Authority

⊙ How will we provide our medical personnel the tools to assess the spine like this?

⊙ How will we decide how much authority to delegate and to whom?

Selective Spinal Immobilization: Clinical Decision Criteria

- Concerning mechanism

- Spine pain/tenderness

- Focal neuro deficit

- Unreliable pt. exam

- Head injury

- Altered sensorium

- Distracting injury

- Communication barriers

- Extremes of age

Special Considerations

- Vacuum/bean-bag + board
- Patient movement / transload
- Inside the ED
- Elderly
- Pregnant
- Pediatric
- Kyphotic
- Tactical settings (LE, SWAT, military)

Review

- Current Practice
- Board or no board
- New term, new mindset
- Assessment
- Authority
- Special Considerations

Selected References

1998, Hauswald et al (Malaysia/New Mexico-SI does harm?)

1998, Brown, et al (EMS & pre-hosp criteria)

1998, Orledge and Pepe (commentary on Hauswald study)

2001, Kwan, et al (Cochrane Review)

2001, Stroh, et al (pro-selective immobilization)

2002, Hauswald, et al

2005, Domeier, et al (Michigan, 2 county study)

2006, Burton, et al (NY state, 1 miss in 32K)

2006, Sundheim et al (only 0.16% may have secondary SCI)

2011, Ahn, et al (10+ studies for EMT-P clearance, no studies for specific duration or type of immobilization)

2013, NAEMSP Position Statement