Lessons Learned From Trauma Systems

Future Of Emergency Care Series
Regional Dissemination Workshop

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Trauma is a major health problem.

AHRQ data
Trauma 71
Heart 67
Cancer 48

http://meps.ahrq.gov
Fig. 1. Percentage of mortality among severely injured patients by year in Quebec. Inclusion criteria specified death as a result of injury or an injury severity score (ISS) exceeding 12, a prehospital index exceeding 3, two or more injuries with an abbreviated injury scale score of 3 or higher, or a hospital stay exceeding 3 days.
Systems work.
Trauma systems & crash mortality
Nathens et al. JAMA 2000

- Trauma Sys. restraint laws:
  -8

- ETOH speed limit increase:
  7

- ETOH:
  -5

- speed limit increase:
  7
After adjustment for differences in the case mix, the overall risk of death was 25 percent lower when care was provided at a trauma center than when it was provided at a non-trauma center.
FIRST U.S. TRAUMA CENTERS
1966

- CHICAGO - COOK COUNTY - ROBERT FREEARK
- SAN FRANCISCO - SFGH - WM. BLAISDELL
Inclusive System

≈ Urban inner city centers—exclusive
≈ Regionalized—most hospitals
From 1992 to 2006: Changes in the TSC process?

Model Trauma System Planning and Evaluation
Trauma Systems Collaborating With Public Health for Improved Injury Outcomes
1992 MTCSP: What a system IS.

- Leadership
- System Development
- Legislation
- Finances
- Injury Prevention & Control
- Human Resources
  - Workforce / education
  - EMS, transport, communication, disaster
- Definitive Care
  - TCs, transfers, rehab
- Information systems
- Evaluation
- Research
2006 Model Trauma System Planning and Evaluation: What a system DOES.

- **Assessment**
  - systems needs vs. resources
  - injury epidemiology
  - ‘burden of injury’ & system performance
  - cost effectiveness

- **Policy Development**
  - Comprehensive authority
  - Trauma Plan & modifications
  - Prevention public policy
  - Establishes evidence-based system guidelines
  - Is driven by assessment

- **Assurance**
  - Use of laws, regulations, standards
  - System PI & oversight body
  - Integration of primary, secondary, tertiary prevention
  - Strategic planning (workforce, all-hazards preparedness, etc)
System development: basic Steps

- Educate & build legislative & public support
- Needs assessment (link to prevention)
- Enabling legislation
- Comprehensive trauma plan
- Oversight structures (STAC, RACs)
- Adopt operational standards
- Initiate PI plan
- Periodic external re-assessment of system
Must define the resources for optimal care.

Structure Process Outcome
Critical function
- Routine reporting
- Linked: state, national
- Supports:
  - Operations
  - Utilization
  - Prevention
  - Research

Is this NEMESIS
Performance Improvement

≈ Accountability
≈ Centers
≈ Systems
≈ Risk adjustment
Outcomes / Guidelines

~ Evidence Based Medicine
  Ÿ Evidence Based Guidelines
    • Systematic analysis of best practice
  Ÿ Development of Clinical trials

≈ Outcome Benchmarks
Trauma Systems Consultation Committee

≈ Combined effort of COT, ACEP, NHTSA, HRSA, and CDC
≈ Must have a multidisciplinary approach
Regionalization is not centralization
Recent Trends towards non-inclusive systems

≈ Lack of commitment and/or resources
  Ÿ refer all injuries to designated centers
  Ÿ declining specialist availability
  Ÿ EMTALA changes
  Ÿ re-directs adverse selection

≈ Centralizing all trauma care
  Ÿ may worsen adverse selection
  Ÿ results in poor utilization of resources
  Ÿ may overwhelm existing centers
  Ÿ may delay treatment of some injuries
  Ÿ may lessen the ‘system’ response to MCI / disaster
Trauma Systems: Common Problems
(based on ACS surveys)

- Reluctance to use enabling legislation
- Inconsistent or non-integrated leadership
- Limited state/regional oversight
- Trends towards exclusive systems
  - No resources, commitment, interest
- Funding, funding, funding, ... etc.
Trauma Systems: Common Problems
(based on ACS surveys)

≈ No trauma plan
≈ Limited (or non-existent) system-based PI
≈ Fragmentation of effort (silo’ing)
≈ Need for technical assistance
  ∑ system components (PI, Tr. Plan, RAC)
  ∑ for TC development & upgrades
  ∑ education
All Politics is Local

≈ Assemble stakeholders in public discussion
≈ Start and end with what the patient needs.

Are we designing a system to assure:
the centers have access to the patients they need
or
patients have access to the centers they need
I don’t think our federal government “gets it”
And that is our fault
We need a simple, concise, consistent message
From all directions

Just being right has almost nothing to do with it
All Trauma Centers
Designated by State or Verified by the ACS/COT

This IOM report is a call to action.

- Coordinated
- Regionalized
- Accountable