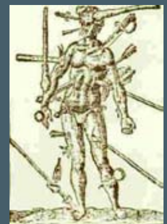
Citizen's Trauma Task Force
Workshop C: Trauma Systems 301

Presented by
Mike Williams, MPA/HSA
April 12, 2004

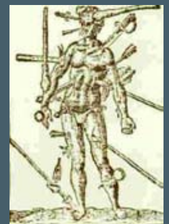
Task Force Workshop Series

- Workshop A: Trauma Systems 101
  - Overview of trauma and trauma systems
  - Nevada trauma history
  - Las Vegas region trauma history
- Workshop B: Trauma Systems 201
  - Trauma system component details
  - Case studies
- Workshop C: Trauma Systems 301
  - Demand & financing issues
  - Benchmarking & best practices
  - Alternative funding sources



Goals of Workshop C - Trauma Systems 301

- Demand – trauma volume
- Financing – revenue
- Best practices – standards of practice
- Alternative revenue sources



Trauma Task Force Role

Jan – April

The Abaris Group
&
American College
of Surgeons Study

Be Informed

TAG
and
ACS Reports

Input

Citizens
Trauma Task Force

May June

Approve

Review
and
Comment

Jun – Jul

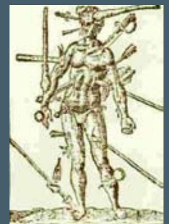
CCHD
Board Approval

State Board of Health
Health Department

Demand of Trauma

Trauma Center

Volume

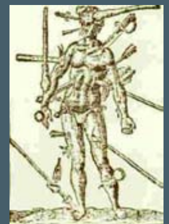


Phases of Trauma Care

Resuscitation — 2-4 beds

Operative and intensive care — 1-2 ORs – 3-8 TICU beds

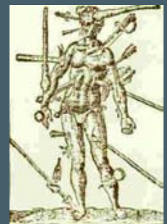
Medical surgical and rehabilitative — 15-35 beds



Defining Demand - Objective

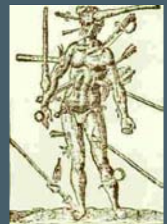
- Metrics:
  - Glascow Coma Scale
  - Blood pressure
  - Respiratory rate
  - Trauma score

- Anatomical:
  - Penetrating injury to the head, neck, torso
  - Two proximal long bone fractures
  - Fracture of the pelvis
  - Acute paralysis
  - Major burns



Defining Demand - Objective

- Mechanism of injury:
  - Fall > 20 feet
  - MVC > 20 mph
  - 20 inches of severe damage
  - 12-inches of intrusion
  - Patient ejection
  - Extrication > 20 minutes
  - Other occupant death
  - Motorcycle > 20 mph
  - Patient thrown by motorcycle

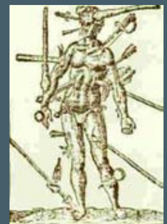


Defining Demand - Subjective

- Co-morbid factors

- < 5 years or > 55 years
  - Cardiac or respiratory disease
  - Insulin-dependent diabetic
  - Cirrhosis
  - Morbidly obese
  - Pregnant
  - Suppressed immune system
  - Bleeding disorder
  - Taking anticoagulant

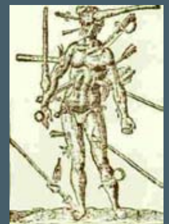
- Other factors



Defining Demand

20 percent objective

80 percent subjective

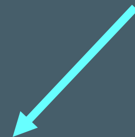


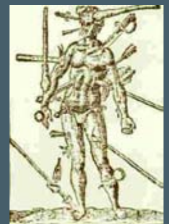
Trauma Utilization Rates

California Trauma Incidence Rate (Per 100,000 Population)

Local EMS Agency	Total Trauma Triages 2001	Population 2001	Incidence Rate/ 100,000 Population
Marin	793	248,900	318.6
Contra Costa	2,839	977,000	290.6
Alameda	4,053	1,475,800	274.6
Santa Clara	4472	1,706,400	262.1
Northern California[1]	1,533	604,100	253.8
Santa Barbara	1,003	405,700	247.2
Inland Counties (San Bernardino, Inyo, Mono)	4,144**	1,797,450	230.5
Riverside	3,459**	1,618,000	213.8
Sierra-Sacramento Valley[2]	1,331	672,500	197.9
Los Angeles	18,837	9,748,500	193.2
Sacramento	2,345	1,267,800	185.0
Kern	1,200**	681,900	176.0
San Mateo	1,133	714,500	158.6
San Francisco	1,131**	789,600	143.2
Fresno, Kings, Madera	1,436	1,084,700	132.4
Coastal Valleys (Mendocino, Napa, Sonoma)	696**	684,000	101.8
Merced	218	216,400	100.7
Orange	2,659	2,910,000	91.4

1.5 – 3.0 trauma cases per 100,000





Trauma Utilization Rates

Las Vegas: 2.38 – 2.78

3,900 activations/year

10.7 activations/day

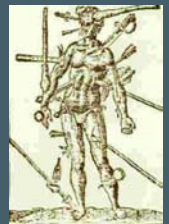
1.5 million population

San Diego County: 2.46

7,321 activations/year

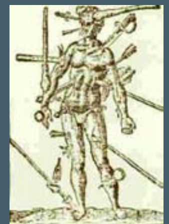
20.5 activations/day

2.9 million population



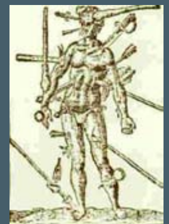
Financing Trauma Centers

Trauma Center Financing



Financing Trauma Centers

Trauma Center Costs



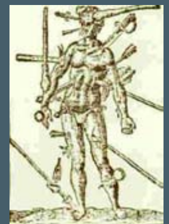
Trauma Center Costs

(1) Patient care

(2) Physician coverage

(3) Trauma management team

(4) Trauma office support



Physician Coverage

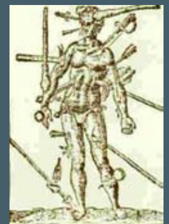
(1) Trauma surgeon

(2) Key subspecialists

- Neurosurgeons
- Orthopedics
- Others

(3) Support specialists

- ENT
- Plastics
- Hand

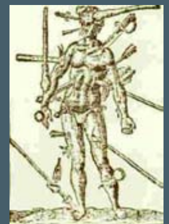


Physician Coverage

Costs $1.0 million

to

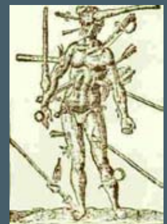
$3.0 million annually



Trauma Center Financing

Fee for service

- Traditional patient charges
- Trauma center charges
- Traditional payers
- Alternative payers
  - ✓ Auto insurance
  - ✓ Homeowners
  - ✓ Victims of Crime Program



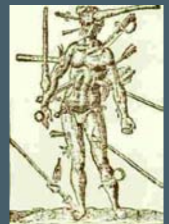
Trauma System Financing

Special Tax Bases

- Alameda County EMS Tax
- Broward County Trauma Tax
- Los Angeles

Statewide Sources

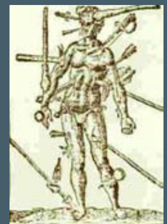
- Arizona
- California
- Illinois
- Mississippi
- Oklahoma
- Texas
- Washington



Trauma Center - Best Practices

Best Practices

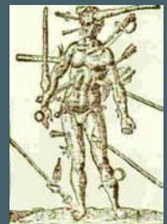
- Case Management
- Trauma prevention
- Extensive outreach
- Transfer clearinghouse
- Specialized education programs
- Staffing by trauma fellows
- Trauma fellowships (surgical, critical care, orthopedics, etc)
- Revenue cycle management
- Dedicated resources (freestanding unit)



Trauma Systems - Best Practices

Best Practices

- Collaborative approaches
- Networked Is, II, IIIs, etc
- Trauma foundations – self governance
- Statewide integrated systems
- Regional advisory committees
- Extensive quality improvement processes
- Stable funding sources
- State-of-the-art information management
- EMS integration
- Cooperative research
- Human resource planning



Questions