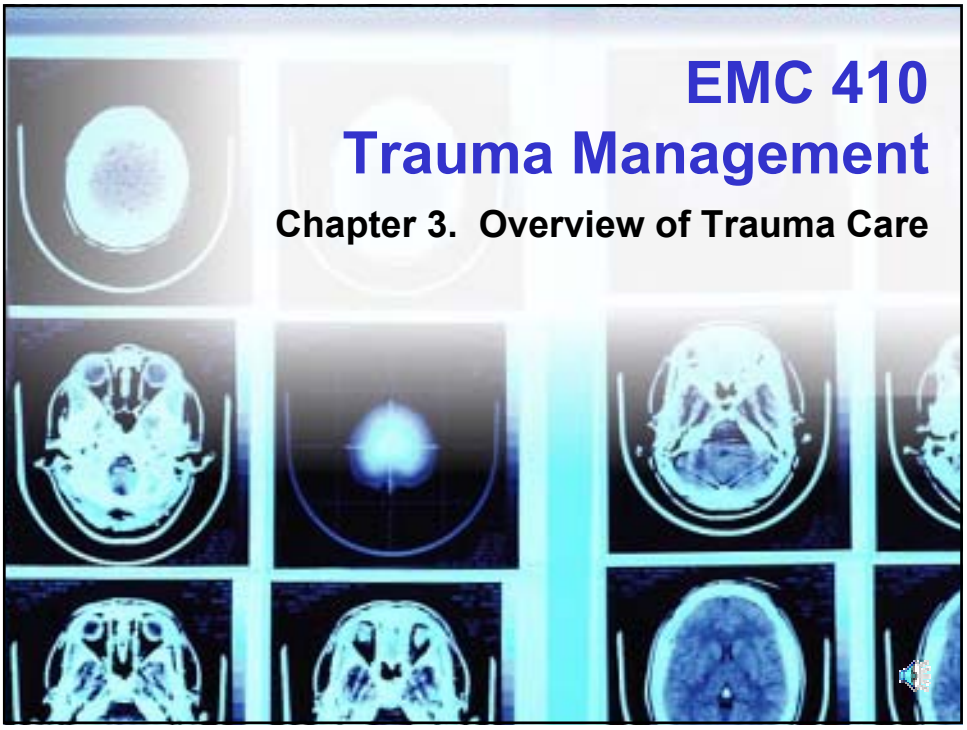


EMC 410
Trauma Management

Chapter 3. Overview of Trauma Care

Unit Objectives

- **Upon completion of this chapter, you should be able to:**
  - List and describe the major etiologies of traumatic death.
  - Discuss the trimodal distribution of trauma deaths and provide examples of the types of interventions necessary to decrease the number of deaths in each category.
  - Briefly trace the history of trauma systems development in this country.
  - Compare and contrast the various levels of trauma centers.
  - Define the role of EMS in trauma care.

Unit Objectives continued

- Discuss the problems encountered in rural trauma situations.
- Discuss the “White Paper” and its effect on EMS system development.

Trauma and EMS

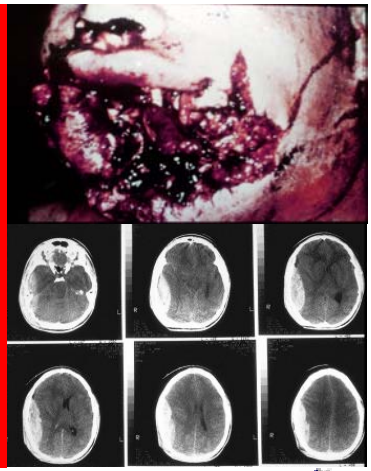
- The #1 cause of death for persons under age 34.
- Less than 10% require prehospital ALS and a Level I trauma center
- 15% require prehospital ALS but not Level I trauma center
- 75% can be managed with prehospital BLS and the local hospital

Why Trauma Patients Die

- **Immediate deaths**
  - Die immediately or within a few minutes of injury
  - Injury to brain, spinal cord, heart or major blood vessel
  - Account for more than 50% of all trauma fatalities
  - Injury prevention is the ***ONLY*** intervention for this group

Why Trauma Patients Die continued

- **Early Deaths**
  - Die within a few hours of injury
  - Account for less than 50% of trauma patient population
  - Pathologies include airway compromise, hemorrhage, intracranial bleed
  - Injuries are treatable by today's standard
  - Require early and aggressive treatment, including prehospital ALS and trauma center
  - ***Survival is time and treatment dependent***

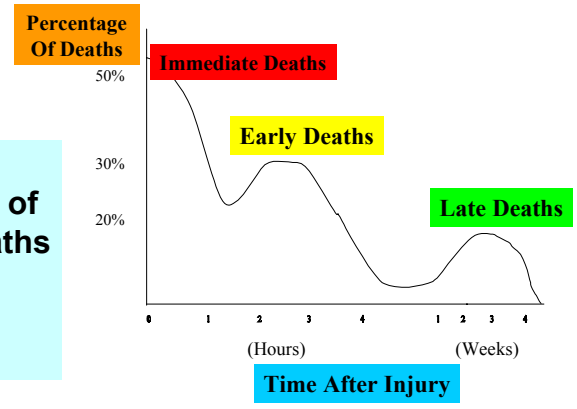


Why Trauma Patients Die continued

- Late Deaths
  - Die days or weeks following the initial injury
  - Deaths are related to the complications of trauma:
    - Infection
    - Sepsis
    - MSOF
    - ARDS
  - Outcome is still dependent on initial care

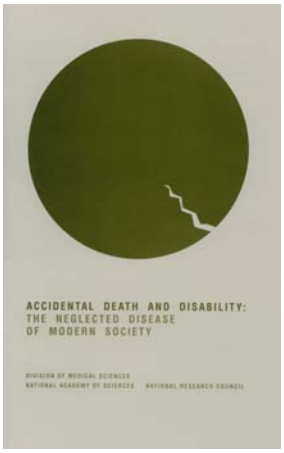
Why Trauma Patients Die continued

- **Trimodal Distribution of Trauma Deaths**
  - Immediate
  - Early
  - Late



Development of Trauma Care

- **Government Involvement**
  - Hill Burton Act (1946)
  - President's commission on highway safety (1965)
  - "White Paper" (1966)
  - Highway Safety Act (1966)
  - EMS Systems Act (1973)
  - Omnibus Budget Reconciliation Act (1981)
  - Trauma Care Systems Planning and Development Act (1990)



Development of Trauma Care continued

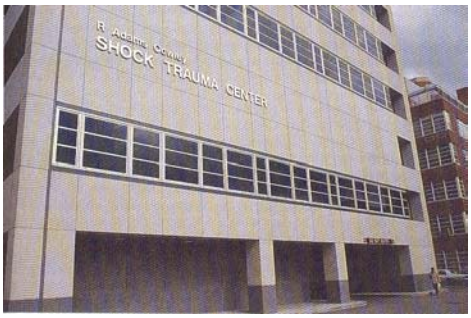
- **Military Contributions**
  - "Field Hospitals" of Roman Empire, Crimean and Civil War
  - Development of field care
    - Helicopters, traction splints, triage
    - Declining mortality
      - WWI 8%
      - WWII 5%
      - Korea 2+%
      - Vietnam 2%

Emergency Medical Services

- PHTLS/BTLS/ATLS
- Triage
- Link to Trauma Care System
- Goals
  - Minimize on-scene time
  - Provide aggressive treatment
  - Transport to the most appropriate facility

Regional Trauma Systems

- **Shocktrauma and Cook County Hospital**
- **Components**
  - Medical direction
  - Communication
  - Triage
  - Transport
  - Public education
  - Evaluation
  - Prevention
  - Training
  - Prehospital care
  - Hospital care
  - Rehabilitation



Regional Trauma Systems

- Levels of Trauma Centers
  - Level I
    - Entire spectrum of care, from prevention to rehabilitation.
    - Usually located at university settings
    - Involved in research, education, and systems planning
  - Level II
    - Capable of managing most trauma cases
    - Offer prevention programs
    - Limited research

Regional Trauma Systems continued

- **Levels of Trauma Centers continued**
  - Level III
    - Located at community hospitals
    - Major trauma cases usually referred to Level I or II center
  - Level IV
    - Located in remote or rural areas
    - May be in a clinic setting
  - Level V
    - Located in desolate areas
    - Virtually all trauma cases eventually transferred

The “Golden Hour”

- R Adams Cowley
- Platinum ten minutes
- The Rural Trauma Problem