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Chapter 01

Chain of Survival and Emergency Medical Services for Children

Objectives

- Identify the links in the pediatric Chain of Survival.
- Explain the purpose of the EMSC Program.
- Define the following terms as they relate to injury prevention:
  - Primary prevention
  - Secondary prevention
  - Tertiary prevention
Pediatric Chain of Survival

- Prevention of illness or injury
- Early CPR
- Early EMS activation
- Rapid advanced life support (ALS)
- Integration of post-cardiac arrest care

Emergency Care Professionals

- Must be trained and competent in the care of pediatric patients
- Must recognize that a child’s physiologic response to a critical illness or injury differs from an adult’s
  - Signs and symptoms of distress may be subtle
- Specific knowledge, equipment, skills, and resources required
Emergency Care

- Children account for a small number of patients treated by emergency care providers
- Infrequent opportunities to use pediatric assessment and life saving skills
- Rapid skill decay
  - Frequent practice sessions and refresher training important to maintain preparedness

Emergency Medical Services (EMS)

- Focus of 1960s to 1970s:
  - Rapid intervention for adult sudden cardiac arrest
  - Rapid transport for motor vehicle crash victims

Emergency Medical Services (EMS)

- Adult outcomes improved
- Needs of children experiencing a medical emergency went largely unrecognized
EMSC

- Federal funds authorized in 1984 for Emergency Medical Services for Children (EMSC)
- Primarily supported/administered by:
  - U.S. Department of Health and Human Services, Health Resources and Services Administration
  - U.S. Department of Transportation, National Highway Traffic Safety Administration

EMSC Program

- Federal EMSC program
  - Defines the population of children to include those from birth to 21 years of age

EMSC Program

- The EMSC program aims to:
  - Ensure state-of-the-art emergency medical care for the ill or injured child and adolescent
  - Ensure that pediatric service is well integrated into an EMS system backed by optimal resources
  - Ensure that the entire spectrum of emergency services is provided to children and adolescents, as well as adults
    - Primary prevention of illness and injury
    - Acute care
    - Rehabilitation
EMSC

- EMSC encompasses seven phases of child and family services:
  1. Prevention
  2. System access
  3. Field treatment (prehospital response)
  4. Transport
  5. Emergency department (stabilization) care
  6. Inpatient services (definitive care)
  7. Rehabilitation
     - Physical therapy, occupational therapy, social services

Epidemiology of Pediatric Illness and Injury

- In the U.S., more than 20,000 children die each year from injuries
  - As a cause of death, pediatric injuries outrank all childhood diseases combined
  - Unintentional injuries are the leading killer of children age 14 and under
  - Children are at higher risk for injury than adults
    - More likely to be seriously affected by the injuries they suffer
  - Each year, roughly one in four children will suffer an injury serious enough to require an ED visit

Injury Prevention
Four “E’s” of Injury Prevention

- Education
- Enforcement
- Environmental modification
- Engineering

Primary Prevention

- Measures applied in advance to reduce the likelihood that an injury will occur

Secondary Prevention

- Interventions that help prevent or minimize an injury while it happens
Tertiary Prevention

- Measures to lessen injury severity and improve outcome after injury has occurred
  - Advanced trauma care
  - Rehabilitation

Identifying the Ill or Injured Child

- Parents and other guardians, such as childcare providers, day care workers, and babysitters need to know how to:
  - Distinguish emergent and nonemergent events
  - Perform emergency first aid procedures
  - Contact the child’s physician
  - Access the emergency care system
  - Authorize emergency care and provide essential information to emergency care professionals