UNIT TERMINAL OBJECTIVE

1-1 At the completion of this unit, the paramedic student will understand his or her roles and responsibilities within an EMS system, and how these roles and responsibilities differ from other levels of providers.

COGNITIVE OBJECTIVES

At the completion of this unit, the paramedic student will be able to:

1-1.1 Define the following terms: (C-1)
- a. EMS Systems
- b. Licensure
- c. Certification
- d. Registration
- e. Profession
- f. Professionalism
- g. Health care professional
- h. Ethics
- I. Peer review
- j. Medical direction
- k. Protocols

1-1.2 Describe key historical events that influenced the development of national Emergency Medical Services (EMS) systems. (C-1)
1-1.3 Identify national groups important to the development, education, and implementation of EMS. (C-1)
1-1.4 Differentiate among the four nationally recognized levels of EMS training/ education, leading to licensure/ certification/ registration. (C-1)
1-1.5 Describe the attributes of a paramedic as a health care professional. (C-1)
1-1.6 Describe the recognized levels of EMS training/ education, leading to licensure/ certification in his or her state. (C-1)
1-1.7 Explain paramedic licensure/ certification, recertification, and reciprocity requirements in his or her state. (C-1)
1-1.8 Evaluate the importance of maintaining one's paramedic license/ certification. (C-3)
1-1.9 Describe the benefits of paramedic continuing education. (C-1)
1-1.10 List current state requirements for paramedic education in his/ her state. (C-1)
1-1.11 Discuss the role of national associations and of a national registry agency. (C-1)
1-1.12 Discuss current issues in his/ her state impacting EMS. (C-1)
1-1.13 Discuss the roles of various EMS standard setting agencies. (C-1)
1-1.14 Identify the standards (components) of an EMS System as defined by the National Highway Traffic Safety Administration. (C-1)
1-1.15 Describe how professionalism applies to the paramedic while on and off duty. (C-1)
1-1.16 Describe examples of professional behaviors in the following areas: integrity, empathy, self-motivation, appearance and personal hygiene, self-confidence, communications, time management, teamwork and diplomacy, respect, patient advocacy, and careful delivery of service. (C-1)
1-1.17 Provide examples of activities that constitute appropriate professional behavior for a paramedic. (C-2)
1-1.18 Describe the importance of quality EMS research to the future of EMS. (C-3)
1-1.19 Identify the benefits of paramedics teaching in their community. (C-1)
1-1.20 Describe what is meant by "citizen involvement in the EMS system." (C-1)
1-1.21 Analyze how the paramedic can benefit the health care system by supporting primary care to patients in the out-of-hospital setting. (C-3)
1-1.22 List the primary and additional responsibilities of paramedics. (C-1)

1-1.23 Describe the role of the EMS physician in providing medical direction. (C-1)
1-1.24 Describe the benefits of medical direction, both on-line and off-line. (C-1)
1-1.25 Describe the process for the development of local policies and protocols. (C-2)
1-1.26 Provide examples of local protocols. (C-1)
1-1.27 Discuss prehospital and out-of-hospital care as an extension of the physician. (C-1)
1-1.28 Describe the relationship between a physician on the scene, the paramedic on the scene, and the EMS physician providing on-line medical direction. (C-1)
1-1.29 Describe the components of continuous quality improvement. (C-1)
1-1.30 Analyze the role of continuous quality improvement with respect to continuing medical education and research. (C-3)
1-1.31 Define the role of the paramedic relative to the safety of the crew, the patient, and bystanders. (C-1)
1-1.32 Identify local health care agencies and transportation resources for patients with special needs. (C-1)
1-1.33 Describe the role of the paramedic in health education activities related to illness and injury prevention. (C-1)
1-1.34 Describe the importance and benefits of research. (C-2)
1-1.35 Explain the EMS provider's role in data collection. (C-1)
1-1.36 Explain the basic principles of research. (C-1)
1-1.37 Describe a process of evaluating and interpreting research. (C-3)

AFFECTIVE OBJECTIVES

At the completion of this unit, the paramedic student will be able to:

1-1.38 Assess personal practices relative to the responsibility for personal safety, the safety of the crew, the patient, and bystanders. (A-3)
1-1.39 Serve as a role model for others relative to professionalism in EMS. (A-3)
1-1.40 Value the need to serve as the patient advocate inclusive of those with special needs, alternate life styles and cultural diversity. (A-3)
1-1.41 Defend the importance of continuing medical education and skills retention. (A-3)
1-1.42 Advocate the need for supporting and participating in research efforts aimed at improving EMS systems. (A-3)
1-1.43 Assess personal attitudes and demeanor that may distract from professionalism. (A-3)
1-1.44 Value the role that family dynamics plays in the total care of patients. (A-3)
1-1.45 Advocate the need for injury prevention, including abusive situations. (A-1)
1-1.46 Exhibit professional behaviors in the following areas: integrity, empathy, self-motivation, appearance and personal hygiene, self-confidence, communications, time management, teamwork and diplomacy, respect, patient advocacy, and careful delivery of service. (A-2)

PSYCHOMOTOR OBJECTIVES

None identified for this unit.

DECLARATIVE

I. Introduction
- A. Role of the paramedic quite different today from the “ambulance driver” of yesterday
- B. Paramedics engage in a variety of professional activities
  1. Enhance their ability to provide quality service

II. EMS system development
- A. Pre-20th century
  1. Biblical
  2. Edwin Smith papyrus (1500 B.C.)
  3. Code of Hammurabi
  4. Jean Larrey, physician - Napoleonic Wars - ambulances volantes (1790s)
  5. American Civil War
     a. Clara Barton, nurse
     b. Coordinated service for wounded
  6. New York City Health Department Ambulance Service - 1869
- B. 20th Century
  1. WWI and WWII developments
     a. Battlefield ambulance corps developed
  2. 1950s and 1960s
     a. Urban, hospital-based systems develop into municipal services
     b. Rural funeral homes develop into volunteer fire and freestanding services
     c. 1966 National Academy of Sciences - National Research Council report
        (1) “Accidental Death and Disability: The Neglected Disease of Modern Society” (the White Paper)
        (2) Defined 10 critical points
     d. Highway Safety Act of 1966
        (1) Created USDOT as a cabinet-level department
        (2) Provided legislative authority and finance to improve EMS
        (3) More than $142 million between 1968 and 1979
        (4) Early advanced life support pilot programs
     e. Mortality comparisons - WWI to Vietnam
        (1) Advances in field care emerged for trauma patients
        (2) Reduced deaths from similar trauma
  3. 1970s
     a. 1973 Emergency Medical Service Systems Act
        (1) Defined 15 required components
        (2) Regional approach, trauma focus
     b. Regional system development 1974 - 1981
     c. 1977 national educational standards for paramedics first developed
  4. 1980s-90s
     a. Omnibus Budget Reconciliation Act of 1981
     b. “Preventive Health and Health Services Block Grant” consolidation
     c. National Highway Traffic Safety Administration (NHTSA) effort to sustain the DHHS effort with reduced funding and staff
     d. NHTSA’s “10 System Elements”
     e. Responsibility for system development, funding, etc., returned to states

(1) Funding reduced, efforts diminish, and momentum lost

f. Health care reform

(1) Managed care, expanded scope of practice, etc.

III. Current EMS system

A. Network of coordinated services that provide aid and medical care to the community

B. Work as a unified whole, to meet the emergency care needs of a community

C. Standards (components) of an EMS System

1. Defined by the National Highway Traffic Safety Administration
   a. Regulation and policy
   b. Resource management
   c. Human resources and training
   d. Transportation
   e. Facilities
   f. Communications
   g. Trauma systems
   h. Public information and education
   i. Medical direction
   j. Evaluation

D. EMS system operation

1. Citizen activation
2. Dispatch
3. Out-of-hospital care
4. Hospital care
5. Rehabilitation

E. EMS provider levels

1. Dispatchers
2. First Responder
3. EMT-Basic
4. EMT-Intermediate
5. Paramedic

IV. National EMS group involvement

A. Involved in the development, education, and implementation of EMS

1. National organizations
2. State organizations
3. Regional organizations
4. Local organizations

B. Benefits of involvement

1. National associations
   a. Information sharing
   b. Promotes the profession
   c. Enhances the status of the profession
   d. Provides a means for a unified voice
2. Joint Review Committee on Educational Programs for the EMT-Paramedic
3. National Registry of EMTs
   a. Contributes to the development of professional standards
   b. Verifies competency by preparing and conducting examinations

c. Vehicle for simplifying the process of state-to-state mobility (reciprocity)
d. Spreads costs of exam development, validation, across large user base

C. Roles of various EMS standard setting groups
1. Establishes standards with input from the profession and the public
2. Ensures public interest is served in standards development and implementation
3. Protects the public
a. Prevents individuals who do not meet professional standards from licensure/ certification

V. Paramedic education
A. Initial education
1. National standard curriculum
a. Competencies
b. Pre- or co-requisites
c. Provided minimum content for a standardized program of study
d. Includes cognitive, psychomotor, affective objectives
e. Clinical requirements
f. Length
(1) Minimum hours commitment
2. Educational resources
a. Facilities
b. Instructors
c. Equipment
d. Clinical experiences
e. References
f. Texts
g. Other instructional materials
3. Enhancement
a. Meets additional state or local needs
b. Needs to change to reflect current practice
B. Continuing education
1. Benefits
a. Maintenance of core or minimal levels of knowledge
b. Maintenance of fundamental technical/ professional skills
c. Expansion of skills and knowledge
d. Cognizance of advances in the profession

VI. Licensure/ certification/ registration
A. Licensure
1. Granting of a license to practice a profession
2. A process of occupational regulation
3. Permission granted by competent authority to engage in a business, profession, or activity otherwise unlawful
4. Involves governmental activity
5. May be required by state or local authorities to practice as a paramedic
B. Certification
1. Grants authority to an individual who has met predetermined qualifications to participate in an activity

2. A document certifying fulfillment of requirements for practice in a field
3. Usually refers to action of a non-governmental entity
4. May be required by state or local authorities to practice as a paramedic
5. Unfounded general belief that "licensed professionals" have greater status than those that are "certified"or "registered"
6. A "certification" granted by a state, conferring a right to engage in a trade or profession, is in fact a "license"

C. Registration
   1. The act of registering
   2. To enroll one's name in a "register" or book of record

D. State and national certification/ recertification requirements

VII. Professionalism

A. Education should help produce a paramedic professional

B. Profession
   1. The existence of a specialized body of knowledge or expertise
   2. Generally, self regulating through licensure or certification verifying competence
   3. Maintains standards including initial and continuing educational requirements

C. Professionalism
   1. Professionals follow standards of conduct and performance for the profession
   2. Adherence to a code of ethics approved by the profession

D. Health care professional
   1. Conforms to the standards of health care professions
   2. Provides quality patient care
   3. Instills pride in the profession
   4. Strives for high standards
   5. Earns respect of others
   6. There are high societal expectations of professionals while on and off duty
   7. EMS personnel occupy positions of public trust
   8. Unprofessional conduct hurts the image of the profession
   9. Commitment to excellence is a daily activity
   10. Image and behavior
      a. How you appear to others and to yourself is important
      b. Vital to establishing credibility and instilling confidence
      c. Highly visible role model
      d. Paramedics represent a variety of persons
         (1) Self
         (2) EMS agency
         (3) State/ county/ city/ district EMS office
         (4) Peers

E. Attributes of professionalism applied to the role of the paramedic
   1. Integrity
      a. Single, most important behavior
      b. Honesty in all actions
      c. Assumed by public in the role of a paramedic
      d. Examples of behavior demonstrating integrity
         (1) Tells the truth
         (2) Does not steal

(3) Complete and accurate documentation

2. Empathy
   a. Identification with and understanding of the feelings, situations, and motives of others
   b. Empathy must be demonstrated to patients, families, and other health care professionals
   c. Examples of behavior demonstrating empathy
      (1) Showing caring and compassion for others
      (2) Demonstrating an understanding of patient and family feelings
      (3) Demonstrating respect for others
      (4) Exhibiting a calm, compassionate and helpful demeanor toward those in need
      (5) Being supportive and reassuring of others
3. Self - motivation
   a. Internal drive for excellence
   b. Demonstrating self direction
   c. Examples of behavior demonstrating motivation
      (1) Taking initiative to complete assignments
      (2) Taking initiative to improve and/ or correct behavior
      (3) Taking on and following through on tasks without constant supervision
      (4) Showing enthusiasm for learning and improvement
      (5) Demonstrating a commitment to continuous quality improvement
      (6) Accepting constructive feedback in a positive manner
      (7) Taking advantage of learning opportunities
4. Appearance and personal hygiene
   a. A person's manner of carrying and presenting oneself
   b. Examples of behavior demonstrating good appearance and personal hygiene
      (1) Clothing and uniform is neat, clean and in good repair
      (2) Demonstrates good personal grooming
5. Self confidence
   a. Trust or reliance on yourself
   b. Having an accurate assessment of your personal and professional strengths and limitations
   c. Examples of behavior demonstrating self confidence
      (1) Demonstrates the ability to trust personal judgement
      (2) Demonstrates an awareness of strengths and limitations
6. Communications
   a. The exchange of thoughts, messages and information
   b. Ability to convey information to others verbally and in writing
   c. The ability to understand and interpret verbal and written messages
   d. Examples of behavior demonstrating good communications
      (1) Speaking clearly
      (2) Writing legibly
      (3) Listening actively
      (4) Adjusting communication strategies to various situations
7. Time management
   a. Organizing tasks to make maximum use of time
   b. Prioritizing tasks

c. Examples of behavior demonstrating good time management
(1) Is punctual
(2) Completes tasks and assignments on time

8. Teamwork and diplomacy
a. Teamwork is the ability to work with others to achieve a common goal
b. Diplomacy is tact and skill in dealing with people
c. Examples of behavior demonstrating teamwork and diplomacy
(1) Places the success of the team above self interest
(2) Does not undermine the team
(3) Helps and supports other team members
(4) Shows respect for all team members
(5) Remains flexible and open to change
(6) Communicates with co-workers in an effort to resolve problems

9. Respect
a. To feel and show deferential regard for others
b. Showing consideration and appreciation
c. Examples of behavior demonstrating respect
(1) Being polite to others
(2) Not using derogatory or demeaning terms
(3) Behavior in a manner to bring credit to yourself, your associations, and your profession

10. Patient advocacy
a. Acting in the best interest of the patient
b. Accepting other's right to differ
c. Not imposing your beliefs on others
d. Examples of behavior demonstrating patient advocacy
(1) Not allowing personal (religious, ethical, political, social, legal) biases to impact patient care
(2) Placing the needs of patients above own self interest
(3) Protecting patient confidentiality

11. Careful delivery of service
a. Delivers the highest quality of patient care with careful attention to detail
b. Critically evaluates performance and attitude
c. Examples of behavior demonstrating a careful deliver of service
(1) Mastering and refreshing skills
(2) Performing complete equipment checks
(3) Careful and safe ambulance operations
(4) Following policies, procedures, and protocols
(5) Following orders of superiors

VIII. The roles and responsibilities of the paramedic
A. Primary responsibilities
1. Preparation
a. Physical, mental, emotional
(1) Positive health practices
b. Appropriate equipment and supplies
c. Adequate knowledge and skill maintenance
2. Response

a. Safety
b. Timeliness

3. Scene assessment
   a. Safety
   b. Mechanism
4. Patient assessment
5. Recognition of injury or illness
   a. Prioritization
6. Management
   a. Following protocols
   b. Interacting with medical direction physician, as needed
7. Appropriate disposition
   a. Treat and transport
      (1) Ground
      (2) Air
   b. Selection of the proper receiving facility
      (1) Requires knowledge of the receiving facilities
      (2) Hospital designation/ categorization
      (3) Based on hospital resource capabilities with regard to optimal patient care
      (4) Clinical capabilities and specialty availability
         (a) Emergency department
         (b) Operating suite
         (c) Post-anesthesia recovery room or surgical intensive care unit
         (d) Intensive care units for trauma patients
         (e) Cardiac
         (f) Neurology
         (g) Acute hemodialysis capability
         (h) Burn specialization
         (i) Acute spinal cord/ head injury management capability
         (j) Radiological special capability
         (k) Rehabilitation
         (l) Clinical laboratory service
         (m) Toxicology
            i) Hazmat/ decontamination
         (n) Hyperbarics
         (o) Reperfusion
         (p) Pediatrics
         (q) Psychiatric facilities
         (r) Trauma centers
         (s) High risk delivery
         (t) Other
      (5) Transfer agreements
      (6) Payers and insurance systems
   c. Treat and transfer with medical direction
   d. Treat and refer with medical direction
8. Patient transfer
   a. Acting as patient advocate

b. Briefing hospital staff
9. Documentation
a. Thorough, accurate patient care reports
b. Completed in timely manner
10. Returning to service
a. Preparation of equipment and supplies
b. Preparing crew
(1) Debriefing

B. Additional responsibilities
1. Community involvement
a. Role modeling
b. Leader activities
c. Community activities
d. Prevention activities
e. Teaching in the community
(1) Helps improve health of the community
(a) Injury and illness prevention
(b) Enhances compliance with treatment regimes, etc.
(2) Ensures appropriate utilization of resources through public education
(a) When, where, how to use EMS
(3) Improves integration of EMS with other health care and public safety agencies
(a) Creates cooperative public education efforts
(4) Enhances visibility and positive image of EMS providers
2. Supporting primary care efforts
a. Some systems may find it beneficial to utilize paramedics in a limited role
b. Can help improve the health of the community
c. Prevent injuries and illnesses
d. Enhance compliance with treatment regimes
e. Ensure more appropriate utilization of resources through public education
(1) When, where, how to use EMS, or need hospitalization
f. Reduce costs of overall system operation
(1) Ensure appropriate utilization of out-of-hospital and other non-EMS health care resources
(a) Less expensive transportation alternatives
(b) Non-hospital ED clinical providers, free standing emergency clinics, etc.
3. Advocating citizen involvement in the EMS system
a. Improves EMS system
(1) Involvement in establishing needs, parameters
(2) Outside, objective view into quality improvement and problem resolution
(3) Creates informed, independent advocates for the EMS system
4. Participate in leadership activities
a. Advocate/ conduct primary illness and injury prevention initiatives
b. Advocate media campaigns to promote EMS issues
c. Identify, develop as necessary, and distribute informational materials
d. Assist agency with sponsoring prevention activities
e. Organize formal and informal illness and injury risk surveys

5. Personal professional development
    a. Explore alternative career paths
    b. Continuing education
    c. Mentoring
    d. Professional organization involvement
    e. Work-related issues impacting career growth
    f. Conducting/ supporting research initiatives

IX. Medical direction
- A. Many services provided by paramedics are derived from medical practices
- B. Paramedics operate as “physician extension”
- C. Physicians regarded as the authorities on issues of medical care
- D. Physicians, properly educated and motivated, are a vital component of EMS
- E. Role of the EMS physician in providing medical direction
    1. Education and training of personnel
    2. Participation in personnel selection process
    3. Participation in equipment selection
    4. Development of clinical protocols, in cooperation with expert EMS personnel
    5. Participation in quality improvement and problem resolution
    6. Provides direct input into patient care
    7. Interfaces between EMS systems and other health care agencies
    8. Advocacy within the medical community
    9. Serve as the “medical conscience” of the EMS system
        a. Advocate for quality patient care
    10. Types of medical direction
        a. On-line/ direct
        b. Off-line/ indirect
- F. Benefits of medical direction
    1. On-line
        a. Immediate and patient specific care
        b. Telemetry
        c. Continuous quality improvement
        d. On-scene
    2. Off-line
        a. Prospective
            (1) Development of protocols/ standing orders, training
            (2) Selection of equipment, supplies and personnel
        b. Retrospective
            (1) Patient care report review, continuous quality improvement
- G. Interacting with a physician on the scene
    1. Origins of medical direction
    2. Use of standing orders
    3. Direct field supervision
    4. The non affiliated on-scene physician

X. Improving system quality
- A. Develop a system for continually evaluating and improving care
    1. Continuous quality improvement (CQI)

a. Focus on the system and not an individual
b. Fix system problems in areas such as
(1) Medical direction
(2) Financing
(3) Training
(4) Communication
(5) Prehospital treatment and transport
(6) Inter-facility transport
(7) Receiving facilities
(8) Specialty care units
(9) Dispatch
(10) Public information and education
(11) Audit and quality assurance
(12) Disaster planning
(13) Mutual aid

2. Dynamic process
a. Delineate system-wide problems identified
b. Elaborate on the cause(s) of the problem
c. Aid the problem and develop remedy(ies)
d. Lay out plan to correct the problem
e. Enforce the plan of correction
f. Reexamine the problem

3. Appropriate EMS research can help enhance quality improvement efforts

XI. EMS research

A. Benefits of research
1. Quality EMS research is beneficial to the future of EMS
a. Changes in professional standards, training, equipment, procedures
b. Based on empirical data, rather than “great ideas” or “new gadget” models
2. EMS funding dependent on scientifically proving the value of EMS services
a. Anecdotes will not suffice
b. Reduced spending by managed care and governmental bodies
c. Outcome studies are needed to assure the continued funding for EMS
3. Enhances recognition and respect for EMS professionals

B. Basic principles
1. Peer review and publication of research
2. Finding research
3. Types of research
a. Descriptive
b. Experimental
c. Prospective
d. Retrospective
e. Cross sectional
4. Population
5. Randomization and control
a. Sample
(1) Systematic sampling
(2) Alternative time sampling

(3) Convenience sampling
b. Sampling error
c. Selection bias
6. Parameter
a. Nuisance variables
7. Blinding
a. Unblinded
b. Single blinded
c. Double blinded
d. Triple blinded
8. Basic statistics
a. Descriptive
(1) Qualitative
(2) Quantitative
(a) Mean
(b) Median
(c) Mode
(d) Standard deviation
b. Inferential
(1) Null hypothesis
(2) Research hypothesis
9. Research ethics
a. Consent
10. Research format
a. Introduction
b. Methods
c. Results
d. Discussion
e. Conclusion

C. Conducting research
1. Prepare a question
2. Write a hypothesis
3. Decide what to measure and the best method to measure it
4. Define the population
5. Identify study limitations
6. Seek study approval
7. Obtain informed consent
8. Gather data
a. Conduct pilot trials first
9. Analyze the data
a. Understand the pitfalls of interpreting data
10. Determine what to do with the research product
a. Publish
b. Present
c. Follow-up studies

D. Examples of research
1. Conclusions based on scientifically sound procedures, techniques, and equipment
2. Answering a clinically important question

3. Results leading to system improvements

E. EMS providers role in data collection

F. Evaluating and interpreting research

1. Was the research peer reviewed?
2. What was the research hypothesis?
3. Was the study approved by an institutional review board and conducted ethically?
4. What was the population being studies?
5. What were the entry/ exclusion criteria for the study?
6. What method was used to draw a sample of patients?
7. How many groups were the patients divided into?
8. How were patients assigned into the groups?
9. What type of data were gathered?
10. Does it appear that the study had enough patients enrolled?
11. Do there appear to be any potential confounding variables that are not accounted for?
12. Were the data properly analyzed?
13. Is the author's conclusion logical based on the data?
14. Does it apply in local EMS systems?
15. Are patients in the study similar to those in the local EMS system?

REFERENCES

Keuhl, S, *1994,Prehospital Systems and Medical Oversight,* 2nd edition, NAEMSP.

Bledsoe, Bryan E., *Paramedic Emergency Care,* 2nd edition, Prentice-Hall Inc.

S. Scott Polsky, MD, FACEP, *Continuous Quality Improvement in EMS*, 1992, ACEP.

Committee on Trauma America College, *Resource for Optimal Care of the Injured Patient: 1993.*

Steering Committee Project, *Consensus Statement on The Role of Emergency Medical Services in Primary Injury Prevention*, 1993, NHTSA/ MCHB/ NAEMSP.

NHTSA'sAir Medical Crew National Standard Curriculum, 1988, ASHBEAMS

Emergency Medical Technician EMT-Intermediate Course Curriculum and Reference Guide, 2nd edition, Oregon Health Division - Emergency Medical Services and Systems.

Menegazzi, J. J. (1993). *Research: The Who, What, Why, When, and How.* Ferno-Washington, Inc.