CHAPTER 1

HISTORY OF EMERGENCY MEDICAL SERVICES

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QUESTIONS AND ANSWERS

1. When did emergency medical services originate?
   There are reports from biblical times where care was performed outside of places for healing. The Edwin Smith Papyrus and Babylonian Code of Hammurabi detailed early treatment and transport protocols. The Good Samaritan parable tells the story of a man who remedied travelers’ wounds with oil and wine on the roadways. The man also helped care for an injured man and assisted in transporting him to an inn to receive further treatment. However, many concepts in emergency medical services (EMS) were actually developed in the battlefield and were later transitioned to civilian EMS.

2. Who created the first ambulances?
   Spain is attributed with first using ambulances, which were more like battlefield hospitals. Initiated by Queen Isabella of Spain during the 1487 siege of Malaga these treatment areas developed. The royalty felt the need to care for the injured members of their troops, further encouraging the usage of medical and surgical supplies on the battlefields. That said, some artwork also exists that suggests the use of battlefield medical transport by Caesar. The first transports were thought to have been by the Anglo-Saxon hammock around CE 900. The hammock was fitted with wheels, which had chains that were held by other attendants in order to prevent it from gaining speed going downhill. A few hundred years later during the Norman conquest of England, horses were employed in transporting patients. A covered bed attached to poles was carried between horses to aid in a more comfortable journey.

3. How did Napoleon’s troops utilize ambulances?
   Dominique-Jean Larrey, who went on to become Napoleon’s surgeon, noted injured troops during the Prussian wars remaining on the battlefield until the fighting had ceased, thus receiving no treatment until they could be extracted. He developed ambulances for the Army of the Rhine in 1793, which then got him noticed and he was sent to join Napoleon’s Army of Italy. With his partner Baron Percy, they established two-wheeled and four-wheeled ambulances that were lightweight and easily mobile. These ambulances allowed a surgeon to potentially treat a soldier in the field with early amputations of limbs to prevent gangrene, or they could be utilized to transport soldiers to hospital instead.

4. When did EMS get started in the United States?
   Soldiers in the Civil War learned from European troops and established a medical service within the Union Army. The service performed field evacuations and created a uniform army ambulance service. The Rucker ambulance, a covered wagon on wheels that could be pulled by horses, was a more advanced and much safer version of the two-wheeled ambulances in European wars. Military forces also adapted steamships and railway cars so they could be used to transport patients longer distances to receive prolonged care.

5. When did civilian EMS get its start in the United States?
   Hospital-based ambulances in Cincinnati and New York were the beginning of civilian EMS programs. Horse-drawn ambulances were stocked with medical equipment of the time, such as bandages, splints, surgical sponges, brandy, and even handcuffs and straitjackets. On occasion, a nurse would staff the ambulance with a driver, but this was less common. Motorized vehicles were used once they became more commonplace. The staffing of the ambulance also changed as private ambulance companies joined in, some of which were operated by funeral homes. In fact, before 1966, half of all ambulance services in the United States were run by funeral homes.

6. When did aeromedical services first develop?
   During the Prussian siege of Paris, hot air balloons were used to transport wounded soldiers. Reports state that approximately 160 injured soldiers were transported in this manner. In World War I, both French and American forces adapted airplanes to transport patients. Eventually around 1929, airplanes were designed for medical transport of injured troops. Helicopters were initially used in the Korean War. With the Vietnam War, rotor wing medical transport became the typical mode of care. Because of the rapid advancement in prehospital military transport, it was believed that injured soldiers in a war zone had a better chance of survival than the victim in a domestic motor vehicle accident.
7. What is the history of modern EMS?
Mobile coronary care units were established in Belfast, Ireland, in 1964 and were shown to reduce mortality of acute myocardial infarction patients by providing some prehospital care. Attempts were made to reproduce these results in the United States but were costly due to the use of physicians in the field. As a result, prehospital care developed into EKG interpretation, intubation, defibrillation, and medication administration being performed by the first paramedics. The National Academy of Sciences published a statement in 1967 showing that the prehospital treatments were inadequate for the needs of an advancing population. Because of this statement, the National Highway Traffic Safety Administration (NHTSA) was established under the Department of Transportation (DOT). The training curricula for all prehospital treatment providers is developed and standardized by the NHTSA. Funding under the NHTSA has provided opportunities for program development and system improvements.

8. Who were Johnny and Roy from Rescue 51 out of Rampart General?
The two characters were paramedics on a popular TV show from the 1970s called “Emergency!”. The show brought prehospital systems and prehospital providers into the public eye. Thus educated on what prehospital medical care could be provided, the public pleaded for these services to be made available in their respective areas.

9. How was the demand for EMS realized?
Some of the public awareness from the TV show drove the need for EMS. The “Emergency Medical Services Act of 1973” provided the funding to establish more than 300 regional EMS systems throughout the United States. EMS programs and systems were cultivated with the idea of creating standards for system-based prehospital care. The funding helped to develop training centers, purchase equipment, and cover administrative expenses. The federal funding had a limit and was exhausted after approximately 8 years. But once the basic structure and facilities had been initiated, many organizations found new funding sources and were able to remain in service.

10. How has the role of physicians in prehospital care changed over time?
Physicians’ roles vary regionally and over time. Early in prehospital care in the United States, physicians rode in the ambulances with a driver to the patients’ homes and provided definitive care when possible. In some areas of the world EMS physicians continue to respond to some calls. However, physicians generally spend more effort on helping to create protocols, reviewing calls for quality improvement, helping to develop education plans, and offering on-line medical oversight.

11. How has EMS changed in the past 30 years?
A host of national and international agencies have been a part of the evolution of EMS care. In 1996, on the 30th anniversary of “Accidental Death and Disability” (white paper published by the National Academy of Sciences in 1973. The research in the report revealed the ignorance of the volume of accidental deaths and injuries annually. The report included how ill-prepared ambulances and EMS staff were to handle these situations). The EMS Agenda for the Future was released and renewed the focus on prehospital care. EMS-provider education became the emphasis when the “EMS Education Agenda” portion was written in 2000, intending to create the “National EMS Scope of Practice and Education Standards.” The Department of Transportation, along with multiple EMS-focused organizations, continue to update and attempt to standardize the curriculum for the various levels of prehospital providers. New levels of providers are being considered and work is being done to develop the respective educational materials. The Commission on Accreditation of Ambulance Services has improved standards for ambulance agencies to attain in order to continue quality care throughout the country. Additionally, in 2013 EMS was declared a subspecialty by the American Board of Emergency Medicine (ABEM). Fellowship programs in EMS have been established throughout the country based on requirements created by ABEM.

12. What plans are in place to help advance EMS beyond current practices?
Multiple programs and committees focused on the advancement of EMS practices have been developed. The “Emergency Medical Services for Children Program” by the Health Resources and Services Administration continues to provide the funding necessary for research, training, and injury-prevention programs aimed at the care of children. As technology continues to advance, EMS systems have become a part of the “National EMS Information System” (NEMSIS). NEMSIS allows EMS data to be shared and analyzed to help research and performance improvement. The National EMS Advisory Council, staffed with both EMS representatives and EMS consumers, currently advises DOT and the Federal Interagency Committee on EMS (FICEMS) on topics in order to advance EMS in ways beneficial to everyone. Revisions of education standards and materials continue to work on the advancement of quality providers and services available.
KEY POINTS

- Emergency Medical Services are believed to have existed since the time of Caesar.
- The basis of EMS was founded because of a need noted during military conflicts.
- Civilian EMS initially was based out of hospitals but has since expanded to include municipal and private agencies.
- EMS education and standards were created by the Department of Transportation and are continuously evolving.

BIBLIOGRAPHY