JGPEMN
ISSN 2091-279X
eISSN 2362-1168

SHORT COMMUNICATION

Integrated emergency medical services during COVID-19 crisis

Prakash Banjade[1], Ahmeed Nasir[1], Jeetendra Bhandari[2], Ashik Rajak[3]

[1]Dept. of Emergency Medical Services, Ministry of Health, Republic of Maldives; [2]Dept. of General Practice & Emergency Medicine, Patan Hospital, Patan Academy of Health Sciences, Lalitpur, Nepal; [3]Medical Officer, Thaa Atoll Hospital, Ministry of Health, Republic of Maldives

Date of submission: 18 May 2024

Date of acceptance: 19 Jun 2024

Date of Publication: 14 Jul 2024

Correspondence:
Dr. Prakash Banjade
Dept. of Emergency Medical Services, Ministry of Health, Republic of Maldives
Email: ur.prakash25@gmail.com

How to cite:
Banjade P, Nasir A, Bhandari J, Rajak A. Integrated emergency medical services during COVID-19 crisis. J Gen Pract Emerg Med Nepal. 2024 Jun;11(17):102-105.

Online information
DOI:
https://doi.org/10.59284/jgpeman265

OPEN ACCESS

Abstract

The COVID-19 pandemic prompted rapid adjustments in pre-hospital emergency medical services. Providers faced significant exposure during aerosolization-risk procedures like airway management and resuscitation. Equipping and training personnel with proper protective gear is crucial. Complex inter-hospital transfers mainly involve intubated COVID-19 patients. To manage resource shortages, pre-hospital triage recommendations should align with hospital processes. Patient orientation—home, hospitalization, or ICU admission—is vital. Hospitals shifted from systematic case recognition to epidemic mitigation, ensuring adequate capacity.

Keywords: Emergency Department; Emergency Hospital Service; Operations; SARS-CoV-2

INTRODUCTION

Emergency Medical Services (EMS) constitute a system dedicated to delivering emergency medical care. When activated by serious illness or injury incidents, EMS focuses on promptly treating patients. Beyond merely transporting patients to hospitals, EMS involves a coordinated response from various agencies and personnel, including emergency vehicles and helicopters. A comprehensive EMS system is ready every day for every kind of emergency.[2] EMS are crucial for saving lives and lowering mortality and morbidity rates.[3]

It is important to realize that a hospital does not manage emergencies or pandemic disasters by itself.[4] There are other pre-hospital factors, which have to be considered. Developed countries such as the USA, the UK, other European countries, Australia and Japan already have systems that integrate pre-hospital and inter-hospital facilities.[5,6] In developing countries, the absence of pre-hospital emergency services and limited resources pose challenges. By integrating available pre-hospital and hospital resources, an Integrated Emergency Medical Services System can be established. This system would efficiently manage daily emergencies and pandemic disasters while ensuring high-quality emergency medical care. To maintain uniformity, the organizational structure should be consistent across national, provincial, district, and local levels, even when resource availability varies. EMS providers handle diverse emergencies and hazards, collaborating closely with law enforcement and fire services, but their core focus remains emergency medical care.[7]

History

EMS traces its origins to the biblical tale of the Good Samaritan.[4] Historical accounts from ancient wars highlight organized methods for transporting and caring for the sick and injured. Records indicate that Caesar appointed battlefield medics within his troops.[5] Napoleon's chief surgeons pioneered 'les ambulances volantes,' horse-drawn wagons with battlefield caregivers. Similar systems emerged in American cities after the Civil War.[5] The modern era of EMS emerged in the late 1960s to early 1970s, introducing coordinated transport and pre-hospital interventions for more intensive community care.[5]

Medical Direction

Doctor involvement, leadership, and oversight are crucial for safe and effective medical care. They play a key role in planning, implementing, and evaluating all system components. Medical direction can be immediate (online) or organizational (offline).[4-5] Online medical direction involves clinical consultation for emergency medical

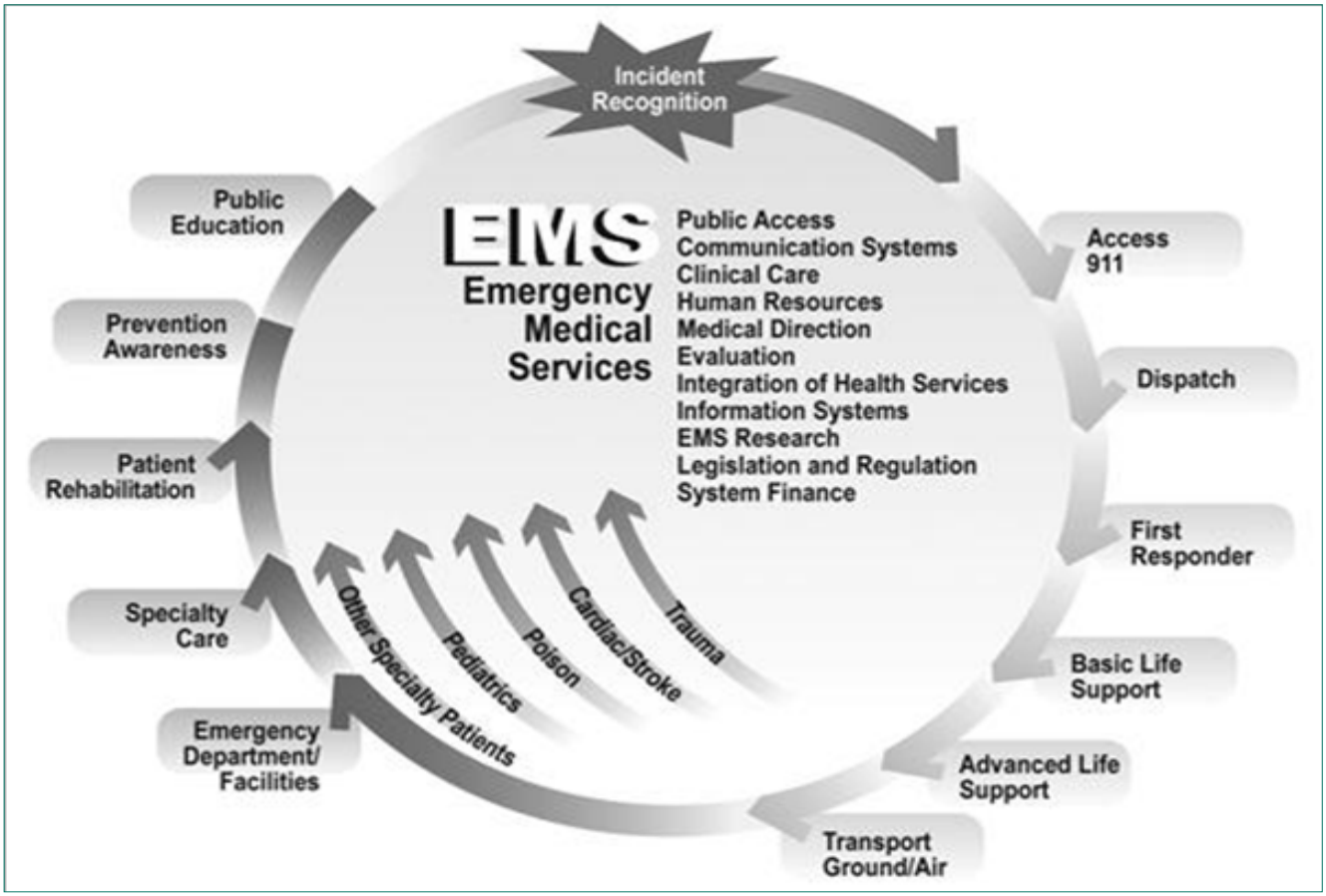

Figure 1. The complexity of an EMS system: the large circle represents each system element as it is activated in response to an incident. The arrows within the circle represent the specialty care areas within EMS

technicians (EMTs) in the field. Typically conducted via radio or telephone, this responsibility is delegated by the medical director to doctors working in local emergency departments (EDs). The base station facility overseeing online medical control monitors advanced life support (ALS) communications, offers field consultations, and notifies receiving facilities about incoming patients. BMJ Physicians providing online direction should be well-trained and familiar with system operations and limitations, while the medical director handles off-line medical direction. The medical director collaborates with the local medical community to develop standards, protocols, policies, and procedures. They also create training programs, issue credentials, conduct evaluations, and establish processes for continuous quality improvement.[5]

Communications

In EMS, clear communication is vital during emergencies. Mistakes, like missing a directive, can endanger patients. Effective communication goes beyond talking - it requires active listening, understanding, and reading body language. The 7 C's of communication (Clarity, Conciseness, etc.) help ensure accurate and professional information exchange. By mastering these skills, EMS leaders create a foundation for successful operations.

Transportation and Facilities

Ground ambulances are the workhorses of EMS, transporting most patients. They must meet federal safety standards and be equipped for either basic or advanced medical care depending on the situation.[5] Air transport consists of a helicopter or airplane equipped for basic life support (BLS) or advanced life support (ALS).[5] Air transport is crucial in emergency medicine for long distances, faster response times, and reaching difficult locations. Strict guidelines determine the equipment, staffing, response speeds, and destinations for these missions. Consulting with medical directors is mandatory for all calls, even if transport isn't needed, to avoid accusations of practicing medicine without a license. Once patients are stabilized, inter-facility transport allows them to be transferred to specialized regional hospitals, bypassing closer facilities if necessary.

Training and Protocols

EMS professionals undergo rigorous training programs that meet regional and national standards to ensure they can fulfill their duties effectively. Additionally, the EMS system plays a valuable role in educating the community by offering courses in CPR, first aid, child safety, and how to access emergency services.[5] The EMS system's medical director sets the gold standard for patient care by overseeing protocols like triage and treatment, ensuring all providers deliver the most effective care possible.[6] During emergencies, triage acts as a critical decision-making tool. It evaluates patients' conditions, sorts them based on severity, and ensures efficient use of limited resources for both treatment and transport. Triage also considers the appropriate level of medical professional and response needed for each case. This becomes especially crucial in situations with multiple casualties, where specific triage criteria help prioritize screening, treatment, and transport of patients.[5,8] To ensure optimal patient care and clear medical accountability, EMS relies on standardized protocols, algorithms, and standing orders that empower providers to take specific actions without needing doctor approval.[5] While following established protocols is mandatory (deviations trigger audits), online medical direction provides real-time guidance and can share some patient care responsibility in complex situations.

Continuous Quality Improvement

Continuous quality improvement (CQI) is an ongoing process in EMS that focuses on evaluating and refining all aspects of patient care and service delivery.[5] EMS strives to deliver the best possible care through CQI. This ongoing process focuses on providing timely, consistent, compassionate, and cost-effective services, ultimately improving patient outcomes. By constantly evaluating and refining practices, CQI ensures field staff can deliver the highest quality care while the entire system supports this vital goal.[4] Monitoring quality in EMS is crucial and involves both internal and external perspectives. Internally, concurrent evaluation happens live, with staff observing and correcting performance to prevent bad habits. Retrospective evaluation, while less valuable due to time constraints, involves reviewing patient records and conducting critique sessions. Additionally, external, unbiased bodies representing consumers, government, and medical professionals provide a broader quality check on the entire EMS system.[5]

Disaster and Pandemic Community Relations

Disaster preparedness relies heavily on a strong EMS system. It's crucial for initial response, transport, and overall disaster planning. Collaboration with public safety agencies, government, and medical professionals is key. A regional disaster plan should address casualty management, communication, treatment, and destinations. Regular drills refine procedures and educate personnel and the community. Public support is vital. Public education programs inform citizens on accessing the EMS system properly and how to provide basic first aid while waiting. Collaboration with local agencies projects a unified message and maximizes impact. Strong ties within and outside the community are essential. Cooperation with public safety agencies (often first responders) and mutual aid agreements with neighboring communities ensure assistance during emergencies. These arrangements ensure uninterrupted patient care in the event of natural disasters or other emergencies.[5]

CONCLUSION

An EMS system is a community-driven, coordinated network designed to deliver rapid response, appropriate medical care, and safe transport for all patients in need, constantly evaluated and improved for optimal quality, efficiency, and cost-effectiveness.

DECLARATIONS

Conflict of Interest

None

Funding

None

REFERENCES

1. Ageron FX, Sarasin F, Pasquier M, Carron PN. Urgences hospitalières: crise COVID-19 et aspects organisationnels [Emergency department: COVID-19 crisis and organizational aspects]. Rev Med Suisse. 2020;16(962):924-9. | PubMed |
2. Mullen J, Furniss WH, Reynolds JA. Emergency medical services plan 2015-2020; Connecticut Dept. of Public Health. 2016 Sep 9. | Full Text |
3. Weems, Elizabeth E. Review of rhetorical work in emergency medical services: communicating in the unpredictable workplace by Elizabeth Angel. Angeli, E. L. (2019). Rhetorical work in emergency medical services: communicating in the unpredictable workplace. Routledge. Communication Design Quarterly Review 9 (2021):39-41. | DOI |
4. Jaffe E, Sonkin R, Strugo R, Zerath E. Evolution of emergency medical calls during a pandemic - an emergency medical service during the COVID-19 outbreak. Am J Emerg Med. 2020. | DOI |
5. Herbosa T. Proposal for Emergency Medical Services (EMS) System in Maldives. [cited 2023 May 24] | Full Text |
6. Carter AJ, Jensen JL, Petrie DA, Greene J, Travers A, Goldstein JP, et al. State of the evidence for emergency medical services (EMS) care: The evolution and current methodology of the Prehospital Evidence-Based Practice (PEP) program. Healthc Policy. 2018 Aug;14(1):57-70. | DOI | PubMed |
7. Emergency Medical Services (EMS) [Internet]. Massachusetts Region 3HMCC. [Cited 2024 May 24]. | Full Text |
8. Centers for Disease Control & Prevention. Interim guidance for emergency medical services (EMS) systems and 911 public safety answering points (PSAPs) for 2019-nCoV in the United States [Internet]. Centers for Disease Control and Prevention. 2020.2020 Oct 30. | Full Text |