

THE CADUCEUS OR THE STAFF OF HERMES: A FOCUS ON 108 AMBULANCE SERVICES IN INDIA

Dr. I Francis Gnanasekar

Associate Professor, Former Vice Principal and Head,
PG & Research Department of Commerce,
St. Joseph's College (Autonomous),
Tirucirappalli, Tamil Nadu – India

P. Bastin Arockia Raj

Research Scholar,
PG & Research Department of Commerce,
St. Joseph's College (Autonomous), Tirucirappalli, Tamil Nadu –
India

Abstract

An ambulance service team includes technicians and paramedics. They are well-trained in first-aid skills in order to handle cardiac arrests, profuse bleeding, road accidents, crush and fall injuries, and many more. Paramedics determine whether the victim has to be taken to a hospital or can be treated on the emergency situation. Ambulance vans are equipped with pre-hospital emergency machines to give temporary medical assistance as what hospitals can offer? In the digital era, all the industries are grown rapidly like manufacturing industry, business industry, and service industry. The medical sciences are also improved tremendously with advance medical facilities. The present study discusses various advancement and technological changes used for the ambulance emergency services. It also gives an insight of operating procedure model in 108 ambulance services in India.

Keywords: emergency communication, operation procedure, technological advance and so on

Introduction

Snakes are sometimes perceived as evil, but they are also perceived as medicine. If you look at an ambulance, there's the two snakes on the side of the ambulance. The caduceus, or the staff of Hermes, there's the two snakes going up it, which means that the venom can also be healing (www.brainyquote.com). An ambulance service plays a vital role in saving human lives. Its primary purpose is to shift the sick or injured people from the emergency scene to the hospital. To meet the demands of different medical situations, the functions of ambulance service has been broadened. Now it can provide 24 hour emergency assistance of home nursing and supply medical products such as beds, home oxygen and so on. Medical standby and First-aid coverage can be

offered in events including private functions, corporate events, major sporting events such as triathlons, marathons and other exigencies (www.thegreenbook.com).

An ambulance service team includes technicians and paramedics. They are well-trained in first-aid skills in order to handle cardiac arrests, profuse bleeding, road accidents, crush and fall injuries, and many more. Paramedics determine whether the victim has to be taken to a hospital or can be treated on the emergency situation. Ambulance vans are equipped with pre-hospital emergency machines to give temporary medical assistance as what hospitals can offer?

In the digital era, all the industries are grown rapidly like manufacturing industry, business industry, and service industry. The medical sciences are also improved tremendously with advance medical facilities. The present study discusses various advancement and technological changes used for the ambulance emergency services. It also gives an insight of operating procedure model in 108 ambulance services in India.

Importance of the study

Ambulance is extremely needed for the people or patients who require the quick medical service. This type of vehicle must be on time because any delay in arrival of the ambulance will change one's life, because of that, the role of ambulance is needed in the society, besides the paramedics, it can be used for saving the hundreds or even thousands of lives by answering the emergence calls from the society. Even when the location is far away from the down town, in rural areas, large contribution, or crowded seaside resorts, when requires, it can get to the places quickly.

The existence of paramedics is vital in the ambulance because the paramedics will ask their medical helper which treat the patients and decide whether they should go to hospitals or just care them in the location itself. Therefore, one of the main roles of medical crews is to care and stabilize the patients quickly in order to prevent the development of symptoms before reaching the hospitals (www.sooperarticles.com).

The crew can deliver the effective and immediate the life-saving treatment with the greatest mobility. Those medical crews of course are well-trained to provide the first-aid for the patients and they deal with fall injuries, crush injuries, road accidents, profuse bleeding, and cardiac arrest.

Now-a-days, ambulance comes in a variety of sizes and shapes and this medical vehicle is also equipped with the wide range of vital emergency tools and machines including splints, intravenous, drugs, oxygen and the others. Besides that, all of the common ambulances are also installed with the radio for the communication. It is

also used for the non-emergency purpose. For example, transferring the patients from the hospital to another hospital. (Sayani Mukherjee, 2017).

That is the roles of ambulance when it comes to how important an ambulance service is to hospitals? This medical facility vehicle delivers the best care for the patients who need the emergency care. This medical transportation also comes with the several medical crews which makes the roles of ambulance more vital.

108 Ambulance Operating procedure model in India

Every four minutes, one Indian dies in the road accidents, while seven to ten per cent are critically injured, twenty to thirty per cent are seriously hurt. Of these, about thirty per cent are disabled for life, either partially or totally. India requires a better emergency medical service to meet the growing number of emergencies (Upadhyay A. K., 2007).

‘The Golden Hour’ and the ‘Platinum Ten Minutes’ typifies the importance of Emergency Medical Services (EMS) all over the world. It is a well-accepted fact that a patient who receives basic care from trained professionals and is transported to the nearest healthcare facility within fifteen-twenty minutes of an emergency has the greatest chance of survival. In spite of the development in the healthcare sector over the past decade, India is yet to create a single, comprehensive EMS that can be accessed throughout the country. There is no single system which can play a major role in managing emergency medical services in India. Only fourteen states have managed to launch a state wide EMS, as on today (www.umm.edu).

There is a fragmented system in place to attend to the emergencies in rest of the country.

Emergency Access Number

One Zero Two (102) is the emergency telephone number for ambulance in parts of India. There are different emergency numbers in India’s twenty nine states and six Union Territories. Hospitals in the country provide different telephone numbers for ambulance services. The Centralized Accidents and Trauma Services (CATS) were set up by the Delhi Government in the early 1990s. (www.asianhnm.com)

This service was later expanded throughout the country. Unfortunately, it didn’t succeed despite having a toll free number 102 that was made available through various media.

More recently, NGOs and hospitals have come forward to provide their own EMS. There have been considerable efforts by states across India to develop emergency services. GVK Emergency Management and Research Institute (GVK EMRI) was founded in 2005. To begin with, its operations were limited to Hyderabad

and Andhra Pradesh with a vision of responding to thirty million emergencies and saving one million lives a year. (*Judith E et.al.*, 2010).

In 2007, with the extension of Ambulance Access for All (AAA)'s services, American Association of Physicians of Indian Origin (AAPI) founded Emergency Medical Service (EMS) for Mumbai. AAPI has collaborated with the Confederation of Indian Industries (CII) and signed a MoU to endorse the growth of the healthcare sector in India, especially in rural areas. This agreement is to provide knowledge and technology transfer and provide EMS to develop healthcare facilities in India. (www.asianhnm.com)

Another such facility, Life Support Ambulance Service (LSAS) operating in Mumbai for three years in association with London Ambulance Service UK has now made inroads into Kerala and has five hundred ambulances that can be reached on a toll free number 1298.

Recently, the Gujarat state government set up the Gujarat Emergency Medical Services Authority (GEMSA). Institute of Kidney Diseases and Research Centre (IKDRC), U.N. Mehta Institute of Cardiology and Research Centre, Gujarat Cancer Research Institute (GCRI), GVK EMRI and Public Health Institute, Gandhinagar have entered into several other PPP projects to improve the emergency services in the state.

108 (emergency telephone number)

108 (usually pronounced "one Zero eight") is a free telephone number for emergency services to call in the Indian states of Andhra Pradesh, Punjab, Gujarat, Uttarakhand, Goa, Rajasthan, Tamil Nadu, Chhattisgarh, Karnataka, Kerala, Assam, Meghalaya, Himachal Pradesh and Madhya Pradesh when an emergency arises. (e-pao.net.com).

The One Zero Eight (108) Emergency Response Services is a free twenty four by seven emergency service for providing integrated medical, police and fire emergency services. The service is provided in Public Private Partnership mode between State Government and private organizations.

The process

When an emergency is reported through One Zero Eight (1-0-8), the call taker gathers the needed basic information and disposes appropriate services.

The One Zero Eight (108) Emergency Response Service should be called:

- ❖ To save a life
- ❖ To report a crime in progress
- ❖ To report a fire
- ❖ Anytime an emergency response is required for medical, law enforcement and fire.

Basic information obtained includes:

- ❖ Location of the call. (District/ City/ Town/ exact location/ landmark).

- ❖ The type of emergency.
- ❖ Number of people injured and the condition of the injured.
- ❖ The caller's name and contact number for location guidance if required.

Emergency help dispatched through this process is expected to reach the site of the emergency in a short time of 18 minutes. Pre-hospital care is given to patients being transported to the nearest hospital.

Out of twenty nine states, presently One Zero Eight (108) call services are available in fourteen states. The major changes have been the incorporation of GPS tracking systems and advanced radio communications (www.scribd.com).

1-0-8 Emergency Process Model

Emergency Management requires the integration of three cardinal pillars: Sense, Reach and Care. Emergency Management requires partnership with multiple institutions to provide quick and quality response. EMRI has therefore integrated with Government and private hospitals for timely response in case of medical emergencies. The 108 call centre is in contact with the police control room constantly for easy dispatch of police and fire brigade in case of Police and Fire emergencies(www.indiamart.com).



Sources: nrhmrajasthan.nic.in

Sense

The Sense paradigm of Emergency Management comprises of information capture regarding the emergency situation. A dedicated toll free number 1-0-8 is used to report any of the three kinds of emergencies - Medical, Police or Fire. The 1-0-8 call is received by the Communication Officer who collects and records all facts regarding the emergency. The information is then transferred to the Dispatch Officer who identifies the nearest ambulance to the scene of emergency and gives instructions for dispatch of the ambulance. (www.tn108.in).

Technology plays an important role in providing state of the art CTI (Computer Telephony Integration) solutions for receiving 1-0-8 emergency calls and maintaining records of the caller data.

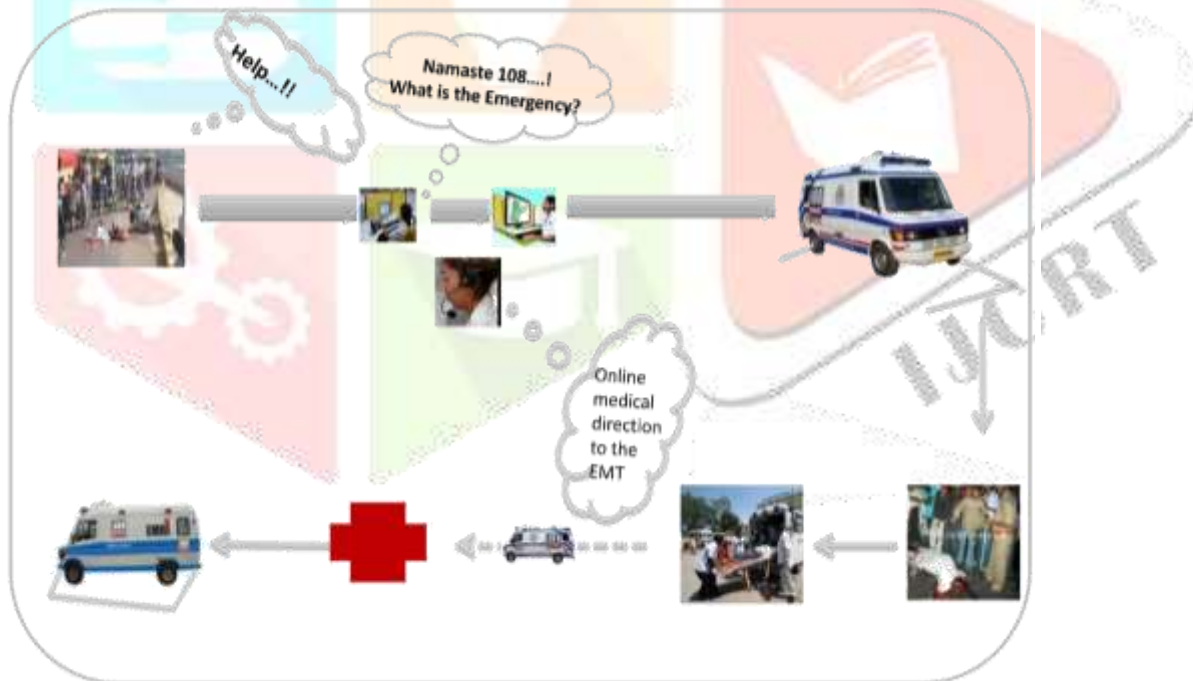
Reach

Reaching the victim in the Golden Hour is crucial for an emergency medical service provider. Our Advanced Life Saving (ALS) ambulances are equipped with advanced medical equipment like defibrillators and ventilators to aid the patient even during transportation to a hospital. Ambulances are strategically placed so as to reach the victim at the earliest possible time. In case of Police or Fire emergencies local State Police Station or Fire department is immediately notified with full details. (www.tn108.in)

Care

Each ambulance is accompanied by a trained EMT (Emergency Medical Technician) who is responsible for pre-hospital care while transporting the patient to a hospital for stabilization. If required, the EMT can be in conference (via cell phone) with the in house ERCP (Emergency Response Care Physician) who is a qualified medical practitioner, available 24/7 to support the EMT as and when required. Our ambulances are equipped with most basic medications and equipments to aid the EMT in pre-hospital care (www.tn108.in).

The EMT maintains a record of every case attended and transfers the filled in Patient Care Record (PCR) forms to the hospital authorities. This record is maintained for future research and analysis.



Sources: www.governmentindustrydialogue.org

Technological advancement of 108 Ambulance services

India has come a long way in integrating latest technologies for advancing emergency medical services. From using hand-carts for transferring patients to the hospital to having a GPS-enabled motor-vehicle equipped with trained paramedics and state-of-the-art equipment at your dispense with just a call, Emergency Medical Response Services (EMRS) have certainly advanced a lot. However, when compared to the scale of tech-

integration achieved by its Western counterparts, India's advancements seem very less, even as a sizeable rural population continues to remain devoid of easy access to the emergency medical services availed by the many urban dwellers (www.zhl.org.in).

Technology has played a crucial role in upgrading the ante of EMRS, be it in terms of efficiency or speed. Today, the growing concern regards inadequacies of communication and pit stops in operations and management can find solace in the blipping arms of fast evolving technological-integrations. Some of them, which are viable for mitigating existing shortcomings in Indian EMRS, are as follows.

Electronic Health Records

Electronic Health Records have been adopted by various countries across the globe to ensure comprehensive, personalised medical treatment. In case of EMRS, this technology can help paramedics enter the patient's medical readings/co-ordinates onto a shared health information technology portal en-route the hospital (Nathens *et.al.*, 2017). Through such a facility, the doctor can analyse the patient's medical condition as well as the medical history and prepare for a suitable treatment methodology before the patient reaches the hospital. This will ensure that minimal time is wasted and more time can be assigned to the treatment of the patient during the Golden Hour.

Video-phone/computer in an ambulance

By installing a video-phone, streaming device or computer with good internet connectivity, the doctor can direct the paramedic to perform certain complex medical procedures. Especially in the event of the patient being terminally ill, such devices can help make the most of the time at hand. Sometimes, this technology can also help the doctor analyse the patient's condition better and consequently direct the EMRS team about whether the patient needs to be transported to a community health centre or a specialty hospital (Dick, 2016).

Streamline operations

While 9-1-1 is a single number for all emergency calls in the United States, such a service has still not been made available to the Indian citizens due to difficulties in proper streamlining of operations. With introduction of better technology however, a similar single-number-service in India is not a long shot. With technology-integration, it possible to register a case, deploy the ambulance and such, as well as streamline operations with automated categorization and re-direction of calls to medical service providers, fire brigades or police departments (www.911ams.us.com).

Automatic crash notification (ACN) technology

The automatic crash notification technology is designed to enable a faster response, as it immediately reports any road crash to the EMRS. The technology also notifies the GPS location of the crash so that the EMRS need not wait for intimation and can come to the rescue of the patient at the earliest. This has helped significantly reduce the mortality rate in countries which have effectively adopted the ACN.

Technology has transformed multiple segments across markets of the world, including the medical stream. Given that EMRS has not been able to penetrate rural communities, technology-integrations such as video-streaming and information sharing can help the masses get trained in first response as well as benefit from quick emergency medical services. With digital fingertip pulse oxymeters, digital blood pressure monitors, among others, precautionary as well as personalised medicine can be brought closer to the villages in the country, empowering them both technologically as well as medically.

Conclusion

Staying aware about the ambulance services and their numbers becomes equivalent to being equipped with a life jacket, so that whenever any person is in need of emergency medical services they can be called instantly. With changing lifestyle, increasing road accidents and such, medical emergencies can occur regardless of an individual's age or proximity to danger. In this scenario, an ambulance works day in and day out to rescue people's lives, restore their dreams and replenish their happiness. The ambulance takes risks and is on its wheels constantly caring for people who need help during life-threatening situations. It is good to keep this friend in your mind and close to your heart, for it is working round the clock establishing its trust with millions of people all over the country. So the caduceus or the staff of Hermes, there's the two snakes going up it, which means that the venom can also be healing.

Reference

1. https://www.brainyquote.com/quotes/nicolas_cage_583718 accessed on 30th January 2018.
2. <http://www.thegreenbook.com/role-of-ambulance-service.htm> accessed on 17th January 2018
3. <http://www.sooperarticles.com/health-fitness-articles/hospitals-articles/importance-ambulance-services-hospitals-1550139.html> accessed on 17th January 2018.
4. Upadhyay A. K. Road Accidents in India. In: Ministry of Road and Transport and Highways: Ministry of Road and Transport and Highways. New Delhi; Dec, 2007. p60, 23.
5. <https://www.umm.edu/programs/shock-trauma/about/history> accessed on 18th January 2018
6. <https://www.asianhnm.com/healthcare-management/emergency-services-india> accessed on 17th January 2018
7. <https://www.asianhnm.com/healthcare-management/emergency-services-india> accessed on 17th January 2018
8. http://e-pao.net/epSubPageExtractor.asp?src=education.Health_Issue.One_-_Zero_-_Eight accessed on 17th January 2018
9. <https://www.scribd.com/document/95750445/1-0-8> accessed on 16th January 2018

10. <https://www.indiamart.com/gvk-secunderabad/other-services.html> accessed on 19th January 2018
11. <http://nrhmrajasthan.nic.in/DHANWANTRI%20AMBULANCE%20YOJNA-%91108%92.htm> accessed on 05th January 2018
12. http://www.tn108.in/demo/?page=process_model accessed on 05th January 2018
13. http://www.tn108.in/demo/?page=process_model#2 accessed on 05th January 2018
14. http://www.tn108.in/demo/?page=process_model#3 accessed on 05th January 2018
15. http://www.governmentindustrydialogue.org/documents/pdf/108_GVK_EMRI.pdf accessed on 05th January 2018
16. - <https://www.heart.org/idc/groups/heart-p> accessed on 12th January 2018
17. <http://www.zhl.org.in/blog/technology-integration-efficient-speedy-emrs-india/> accessed on 12th January 2018.
18. www.911ams.us.com accessed on 08th January 2018.
19. *International Journal of Innovative Research & Development* 3(13)410-413.
20. *International Journal of Tropical Disease & Health* 17(2): 1-12, 201.
21. *Journal of Health, Medicine and Nursing* 23(1) 20-27.

Author Profile



Dr. I Francis Gnanasekar., M.Com., M.Phil., B.Ed., MBA., PhD. Former Vice Principal and Head, Associate Professor of Commerce, St. Joseph's College(Autonomous), Tiruchirappalli. He has 33 years of rich experience in the field of teaching in Commerce. He was in different capacities in his service namely Vice Principal, Head, Placement Officer, and Chairman in Board of Examination and so on.

He is honoured as chief guest and external examiner in many National and International seminars, workshop and PhD Viva. He is authored five books namely Portfolio management, Online shopping through Social Networking , Marketing Strategy and so on. He is produced 12 PhD's and more than 70 M.Phil Graduates. He has Published more than 81 research Papers in various National and International Highly Indexed and cited Journals. He has done many major and minor UGC projects.



P Bastin Arockia Raj., M.Com., M.Phil., MBA., SET., Research Scholar, PG & Research Department of Commerce, St. Joseph's College(Autonomous), Tiruchirappalli. He is working as a Assistant Professor in the Department of Business Administration, St. Joseph's College (Autonomous), Tiruchirappalli. He is Published eight research papers in National and International Journals. He is pursuing PhD research Under the Guidance of Dr. I Francis Gnanasekar., M.Com., M.Phil., B.Ed., MBA., PhD. Former Vice Principal and Head, Associate Professor of Commerce, St. Joseph's College(Autonomous), Tiruchirappalli.