

## MANAGEMENT OF THE PATIENT FROM THE SITE OF ACCIDENT TO THE HOSPITAL/ PRE-HOSPITAL CARE

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### ABSTRACT:

Pre-hospital care is very important in the emergency medical conditions and it can lead to improved patient outcomes. This pre-hospital care is usually offered to the patient on the site of incident and during transfer to the ambulance and the initial treatment entirely depends on the illness or injury of the patient. These services can either be provided by paramedical staff or any other health professional having adequate knowledge and experience in the field. The aim of the prospective study was to evaluate the effect of Emergency Medical Services in improving patient's quality of life in Pakistani scenario. We observed 30 patients by attending emergencies with Rescue 1122 from 24<sup>th</sup> June to 6<sup>th</sup> July 2010. About 50% of the cases were Medical Emergencies and about 33% were Road Traffic Accidents. In 60% cases the response time was less than 10 minutes and shifting time is about 10-15 minutes in 48% of the emergencies. It can be concluded that by improving the standard of equipments and emergency services in the ambulance, we can improve the chances of survival of a patient and improve his quality of life by reducing the severity of symptoms.

**Keywords:** *Pre-hospital care, Paramedical staff, Emergencies, Quality of life.*

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### INTRODUCTION:

Emergency medical services (EMS) are a branch of emergency services dedicating to providing out-of-hospital acute medical care and transport to definitive care the patient with illness and injuries which the patient or the medical practitioner considers a medical emergency.

Emergency medical services exist to fulfill the basic principles of First-aid, which are to preserve life, prevent further injury and promote recovery. EMS is a system that provides emergency medical care. ([www.ems.gov](http://www.ems.gov))

Emergency medical technicians are usually able to perform a wide range of emergency medical care services such as ABC which means Airway, Breathing and Blood Circulation and attempts made to stop bleeding ([www.edhifoundation.com](http://www.edhifoundation.com)). The initial treatment is dependent on the illness or injury but usually start with giving oxygen, taking blood pressure, checking blood sugar level and taking a pulse, looking at patient's perfusion ([www.ambulance.nsw.gov.au](http://www.ambulance.nsw.gov.au)). Emergency medical technicians provide basic emergency care (CPR) at the scene of collapse and during

journey to hospital [1], stabilize the patient and rapidly transfer to the closest appropriate hospital[2].

Paramedics can be trained to see and treat elderly people with acute minor conditions and reduce the need for emergency department attendance by almost 25%. Patients find this approach more satisfactory than attending emergency department. [3].

Additional care can be given at the scene of collapse by paramedics capable of advance emergency care (defibrillation, endotracheal intubation, drugs). Paramedic services improved the rate of live admission to the hospital. Pre-hospital practitioner model places pre-hospital systems in symbiotic relationship with the health care system [1].

The Term ambulance comes from Latin word "*ambulare*" meaning "to walk or to move about". Ambulance is a vehicle for transportation of sick or injured people to, from or between places of treatment of an illness or injury and in some instances will also provide out of hospital medical care to the patient.

An ambulance can be considered successful if it arrives in less than 8 minutes regardless of whether or not the patient survives; or an

ambulance may be considered to have failed in its service despite the patient being transported to the hospital alive. [4]

Socio-economic factors i.e. age, gender, household income and possession of car influences a person's decision to call an ambulance in non-emergency situation. Pre-hospital care in emergency condition is a necessary component of health care system which requires a lot of attention and improvement so that every individual can be benefited from it despite of any limitations or barriers. [5]

The essential decision in pre-hospital care is whether the patient should be taken immediately to the hospital, which is known as "Scoop and Run" or advance care resources should be taken to the patient where they lie. This approach is known as "Stay and Play". Scoop and Run is based on the "Golden Hour Theory". Minimal time is spent providing pre-hospital care and patient is provided with ABC's (airway, breathing, circulation). Aim in scoop and run treatment is generally to transport the patient within 10 minutes of arrival. This is known as "Platinum 10 minutes".

In Pakistan ambulances were/are not well equipped so they may not provide full emergency care in ambulance but improving the standard of equipments and clinical services in ambulance we can improve the chances of survival of a patient and improving his quality of life by reducing the severity of the symptoms. However, Pakistan has now built an emergency rescue services with advanced clinical skills rivaling that of many developed nations. Pakistan has following ambulance services –Edhi foundation, Rescue 1122 and Red Crescent, apart from hospital owned ambulances.

The absence of litigation laws and policies on ambulance services make it possible for any individual to own a van for transporting the sick, injured or dead. The emergency departments of teaching hospitals are working efficiently all over the country.

The aim of the prospective study was to evaluate the effect of Emergency Medical

Services in improving patient's quality of life in Pakistani scenario.

#### **MATERIALS AND METHODS:**

The aim of the study was to evaluate access and affordability of Emergency Medical Services, identify weak areas, check mortality and morbidity and time motion study. For this purpose, the study was conducted with the assistance of Rescue 1122, which is a leading emergency service in Pakistan. We observed 30 patients by attending emergencies which varied from road side accidents to other medical emergencies including chest pain, shortness of breath, fractures, excessive bleeding etc. A data collection form was designed to assess the various aspects of emergency medical services. The main questions included basic knowledge of First aid among people, response and shifting time of the ambulance service, medication administered, services provided inside the ambulance and the level of satisfaction of people regarding Emergency services available in the country. Pre-hospital care varied in different emergency situations like in case of road traffic accidents washing and antiseptic dressing of wounds is done along with immobilization of the patient to prevent spinal injury. Vitals are checked in almost every patient and oxygen is supplied if required by the patient. Emergency medical services offered by Rescue 1122 is compared with the other ambulance services in Lahore, which include ambulance service of Services Hospital, Lady Wellington and National hospital and a private ambulance service of Al-Khidmat Foundation. Response and shifting time and service charges of various ambulance services were compared.

#### **RESULTS:**

The attendant or patient himself came to know about his emergency medical condition when severe signs appeared, which included extreme pain, fits, excessive bleeding, unconsciousness. About 42% of the people were aware of Concept of First aid whereas 52% had no information on first aid (figure:1) No formally trained first aid provider was present at the site

of emergency but initial care was provided to 20% of the patients by the attendants (figure:2) 13% of patients were unconscious when the ambulance arrived. The ambulance had a response time of less than 10 minutes in 60% cases, 15-20 minutes in 30%, 30-45 minutes in 10% and response time did not exceed more than 1 hour (figure:3). Two paramedics were always present in ambulance. Medications such as analgesics were administered to about 40% of the patients. Vitals were checked in 90% of the patients, airway maintenance was done in 26%, and anti-septic dressing 36% and immobilization was done in 33% patients (figure:4). The ambulance was properly air-conditioned and siren was working. Shifting time (site to the hospital) was 5 minutes in 32%, 10-15 minutes in 48%, 20-30 minutes in 20% and shifting time did not exceed more than 1 hour. (figure:5) 98% of attendants think that pre-hospital care improves patient's quality of life. 90% of the people think that ambulance should have a doctor. 97% of the patients and attendants were satisfied with the staff performance. 80% of patients were interested in first aid training. 76% of the people were satisfied with the overall emergency services available in the country (figure: 6).

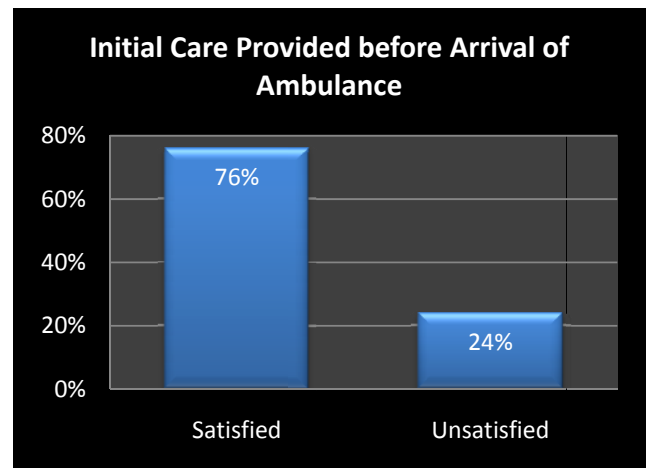


Figure: 2 Initial Care Provided

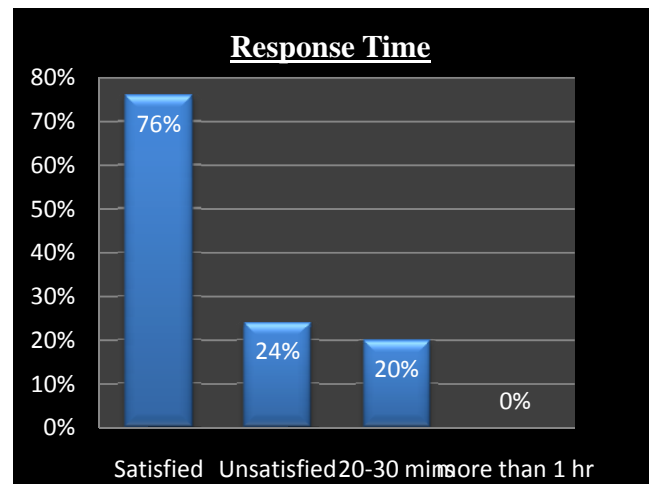


Figure: 3 Response Time

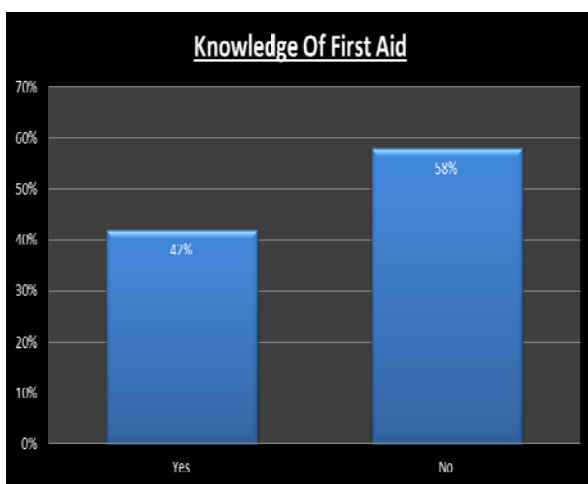


Figure: 1 Knowledge of First Aid

In our study, 42% of the people knew the concept of first aid and 58% were not aware.

Before the Arrival of Ambulance Initial Care was provided to about 20% of the patients by the attendants before the arrival of ambulance. In 60% of the cases the response time was less than 10 minutes, 15-20 minutes in 30% cases and 30-45 minutes in 10% cases. The response time does not exceed more than 1 hour. 40% of the patients received medications, vitals were checked in 90%, airway maintenance and anti-septic dressing was done in 26% and 36% patients respectively. Immobilization is done in 33% of patients. 32% of patients were shifted in 5 minutes, 48% were shifted in 10-15 minutes, 20% were shifted in 20-30 minutes and the shifting time did not exceed from 1 hour. 76% of individuals are satisfied with overall emergency service and 24% are unsatisfied.

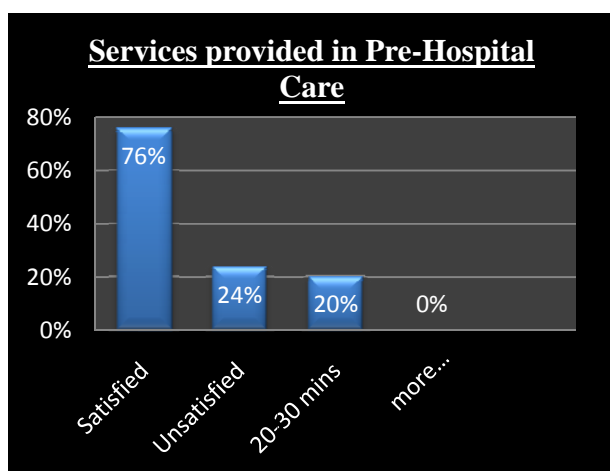


Figure: 4 Services provided in Pre-Hospital Care

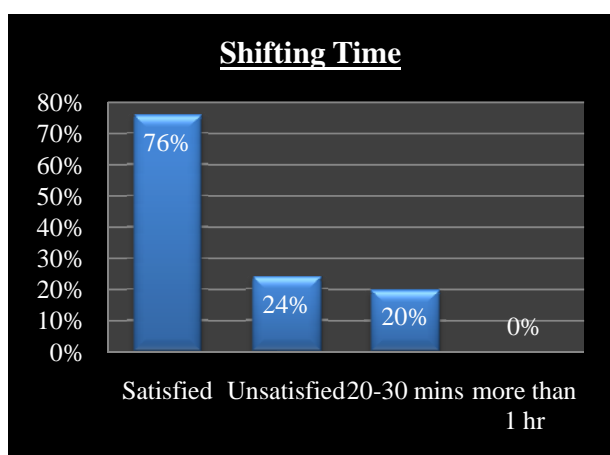


Figure: 5 Shifting Time

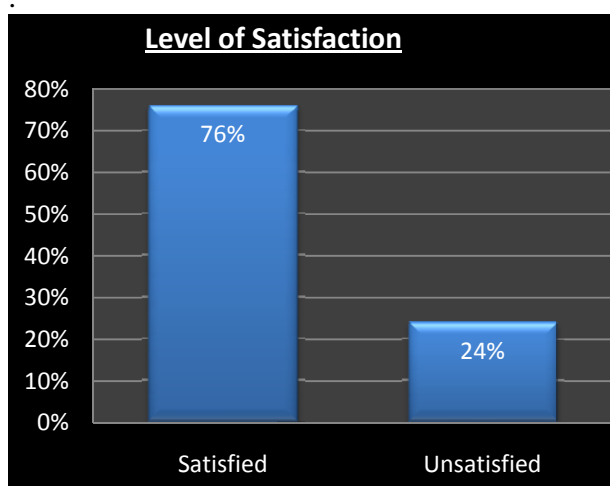


Figure: 6 Level of Satisfaction

## DISCUSSION:

Due to lack of awareness, the emergency medical condition of a patient is often ignored

by the patient himself or by the attendants until the severity of the problem becomes unbearable. Most people are aware of the concept of first-aid but they are not formally trained to provide it. But still initial care is provided in some cases which included administration of analgesics or bandage of the wounds, to prevent excessive bleeding. Mis-identification of the clinical situation and self-medication can lead to further complications like people normally take Paracetamol or antacids to treat chest and shoulder pain, which may be a sign of Angina attack. 87% of the patients were conscious which helped in treating them more effectively because they were able to communicate with the paramedics. The average response time was 7 minutes and average shifting time was 10-15 minutes. Traffic jams and long distances may increase the response and shifting time. Medication was administered according to the need of the patient. The medicines commonly administered were Diclofenac Na, Avil, and Dimenhydrinate. Washing and anti-septic dressing is done in case of injury and normal saline is administered intravenously to restore the blood volume in case of bleeding. Different services are provided inside the ambulance like CPR, airway maintenance, anti-septic dressing and vitals checking. These services reduce the chances of further complications of an emergency medical condition. Air condition and siren were working properly, which is a fundamental requirement of an efficient ambulance service. Most of the patients and attendants wanted that a doctor should be present in the ambulance which showed that mostly people are unaware of the role of paramedics. Many people were quite satisfied with emergency services provided by Rescue 1122 but they had some reservations regarding other ambulance services available in Lahore. Except for Rescue 1122 no other ambulance service provides pre-hospital care to the patient. Their services are free of cost. Whereas the ambulance services of the hospitals (Services and National Hospital), neither have a trained paramedical staff nor equipments like burn kit, Spine board, airway kit etc. These hospitals

also charge Rs.500-1000/- per visit of the ambulance depending upon the distance. Lady Wellington Hospital is a leading gynae hospital in Lahore but it does not have any ambulance service, which is very distressing. The ambulance of Al-Khidmat foundation merely was a van with a stretcher at the back. It had no paramedical staff and any other medical equipment not even basic first aid box or oxygen cylinder. So they strictly follow the approach of “scoop and run”. The ambulance service without trained staff cannot be beneficial for the patient because they are unable to stabilize the patient before reaching the hospital. In Pakistan when people are reluctant to help the victim of road side accident because of the fear of police case, Rescue 1122 staff not only provides emergency medical services but also shift them to the hospital by fulfilling all official requirements and discuss the medical condition of patient with the on duty physician then ultimately hand over the patient to his relatives.

#### **CONCLUSION:**

It can be concluded that by improving the standard of equipments and emergency services in the ambulance we can improve the chances of survival of a patient and improve his quality of life by reducing the severity of symptoms. But unfortunately in Pakistan, there is no fully operational system for emergency preparedness, response and evaluation. As a result in case of any natural calamity or other emergency situations, we are unable to cope with it. But it's a relief to know that Pakistan has now built an emergency rescue service with advanced clinical skills. Rescue 1122 is the only ambulance service, which provides pre-hospital care to the patient. With a response time of less than 8 minutes; this service is a blessing for the people of Pakistan. Role of pharmacist in EMS is to individualize dose of drug and minimize chances of adverse drug reactions. The significant role of Pharmacist in EMS indicate that “Pharmacists Care; No matter where”

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