On the Rescue- 1122: *Quality Enhancement in Emergency First Response*

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ABSTRACT

Due to lack inpublic awareness and observation of traffic rules and regulations, the frequency of Road Traffic Accidents (RTA)is increasing in Pakistan with every passing day. This climbing rate of RTAs require an effective and quick emergency response especially for facilitation of ambulances, fire-fighters, bomb disposal squads, anti-terrorist forces etc. as well as a preparatory measure against natural disasters like earthquakes, floods, building collapses. Spontaneous emergency action in Punjab (the most populous province of Pakistan) is mostly provided by "Punjab Emergency Services Rescue 1122", owned by the Government of Punjab (GOP), Pakistan. Emergency response can be defined as those situations where life, property or the environment is directly jeopardized. Rescue 1122 provides free of cost help in disasters, RTA's and general emergencies. There is an enormous requirement to enhance protection and quality in this rescue work by imparting awareness and skills to the first responders as well as expand the circle of emergencies to RTA's involvinghead injuries, strokes, poisons and hazardous materials, CPR (cardiopulmonary resuscitation), AED(automated External Defibrillator) usage, spinal and bone fracture immobilization etc. through regular effective training. In this research we have highlighted the issues related to the emergency response and quality in Emergency First Response in Punjab, Pakistan as well as proposing solutions to address those issues.

Keywords: *Punjab Emergency Services Rescue 1122*, *OP (Government of The Punjab), RTA (Road traffic accidents), CPR (cardiopulmonary Resuscitation), AED (automated External Defibrillator)*

1. INTRODUCTION

In Pakistan, there are many committed organizations which provide assistance to emergency victims as volunteers, NGO's (Non-Governmental Organizations) and other government services. The aim is to minimize the threat to life by givingall possible assistance to these victims at the emergency spot and also shift them to hospitals for further medical care. Among these organizations, Punjab Emergency Service, commonly known as "Rescue 1122" or "1122" for its emergency helpline number, is the largest highly trained and well-equipped department working under Government of Punjab, Pakistan. It provides assistance in 36 districts and 12 tehsils in the Punjab so far and is expanding its circumference of service area. The workers in Rescue 1122 have been in emergency situations covering fire, building collapses, medical emergencies, RTA's and a wide range of other vulnerable situations.

The District Emergency Officer (DEO) is responsible for the day-to-day operational management and administration of the service in the districts in close coordination with the District Administration. The office of the Director General is mainly responsible for the overall monitoring to ensure uniformity and quality, training, planning, research and development through the Provincial Monitoring Cell. The management is currently working to improve its services. In March 2013, Emergency Rescue Service Rawalpindi received 14 new fully equipped ambulances [1].

The Academy is in the process of obtaining international accreditation. Bilateral collaboration between PES and emergency services of the United Kingdom has trained emergency officers in the UK. Moreover, Rescue 1122 is now also training Pakistan Army's Medical Corp.
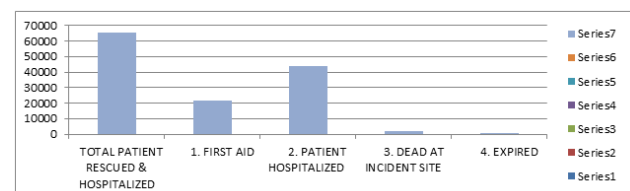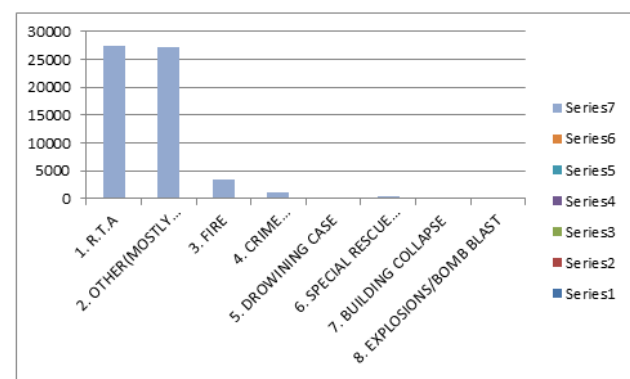

Figure 1:Emergency details graphs (2007-2013).

Figure 2:Patient Rescued details graphs (2007-2013).

The growing number of emergencies and the services provided in different situations by Rescue 1122 Rawalpindi are shown in Figure-1 and Figure-2 respectively. The ever growing need to address such mounting requirements for trained personnel working in dedicated organizations fully equipped with machinery for this purpose cannot be denied.

2. LITERATURE REVIEW

With the recent advancement in technology enabling instant communication and breakthroughs in medical field, a worldwide change has been observed regarding human life safety and care. As a result, emergency management control cells and readiness plans have emerged as an essential part of healthcare and social setup in countries. The developments dictate measures to formulate contingency plans against universal disasters and natural tragediesto save precious human life.

To cope with these disasters, an effective emergency management system was required in Punjab, Pakistan. Punjabgot lucky to have the amenity of well-equipped organization in the shape of Rescue 1122 which is working day and night and has rescued over1911674 victims of emergencies through its emergency ambulance, rescue and fire services. Its community emergency response teams boast of an average response time of 7 minutes; serving while keeping the same standard in all districts and tehsils of the province with abooming population of over 80 million. Owing to this exemplary performance, PES Rescue 1122 was declared as a Disaster Response Force by the Provincial Disaster Management Authority (PDMA), Government of the Punjab Pakistan [1].The community-based health workforce comprisesall those at the community level who contribute to better health outcomes by promoting health and providing primary health care (PHC) [2].

One of the reasons that lessons about disasters are not learned is because it is difficult foremergency response teams and planners to getaccurate information about what happens in disasters, sothat they may profit from the first-hand experiences and be able to plan ahead [3].

Incident areas are parts of a highway temporarily cordoned off so that traffic controls can be imposed by authorized officials in response to a traffic incident, natural disaster, or special event. They may also extend from the initial warning devices such as placement of emergency lights or cone on a point where road user will be able to access the situation and return to their original lane and are apparent from accident. A zone which named as "TTC" may be established for reasons like emergency accident, weather conditions (fog, slips etc.), and road repairs, damaged or disabled vehicles. The MUTCD is an emergency area on the road side or a highway where traffic incident management areas apply. To sum up every emergency responder should be aware of the MUTCD measures for establishing TTC at TIMAs (traffic incident management area) [4].

3. RESEARCH ISSUES AND POSSIBLE COUNTERMEASURES

Evolving an assessment system to measure the quality in emergency response plans presents a number of issues and challenges. A number of factors contribute to a successful response and a single assessment of an authority's response plan may not sufficiently replicate all of these elements during a real-life incident. However, these possible solutions evaluate response plans including crowd handling, roles and responsibilities in implementation, inter-organizational coordination, and protocols to exercise effective traffic management system and protocols during shifting the victims. These elements, along with policies that are grounded in the fact base, all have an impact on the success of response and should be included in the emergency plan. Based on the literature reviewed, some of the research questions have been listed below.

A. Crowd Handling

Crowding at the emergency area is common problem at emergency or disastrous place. People tend to gather at incident areas in an effort to help those who have suffered. However, the common man is not trained to provide help in case of severe head/spine injuries and may worsen the condition of victim. Even when the rescue teams have arrived, the crowd doesn't step back to let them take the lead until the police officials' cordon off the area. This involuntary thwarting of rescue services need to be given attention. Awareness among masses through electronic media messages, seminars and print media is one way. In addition to it, Rescue Operations may employ Law Enforcement Agencies or use volunteers.

B. Effective Traffic Management

Figure-3 presents a snapshot of traffic mismanagement during Rescue operations. Due to traffic mismanagement it is very difficult for timely response and gave the effective first aid to the affecties. Over 40% of Rescue 1122 beneficiaries are those who fall prey due to Road Traffic Accidents (RTAs). Similarly most of the fatalities and disabilities are also being reported due to traffic crashes. The analysis of traffic crashes shows that over 50% Road traffic accidents' (RTA's) victims are having ages from 18 to 50 years, and young earning bread winners of society are becoming victims of traffic crashes. Deaths and disabilities to this age group are therefore causing huge socio-economic impact on society.

In order to minimize the number of traffic crashes, Rescue 1122 has started a number of Road Safety initiatives which include Regular Date Compilation and Analysis for Prevention purposes, Trauma Registry Program, Public Awareness campaign of safety messages and disseminating of accidents dairy to media personnel on daily basis. This is another reason why effective traffic management system is crucial to reducing the number of accidents and improving the response time if an emergency situation arises.

Figure 3: Snapshot of traffic miss management during emergency

C. Situation Handling After Reaching at Emergency Spot

Figure-4 has captured the working in an emergency area. The Incident Commander should have a plan on how to deal with different kinds of emergencies; including Labeling (triage) to the victims after reaching at the incident site. This is the main measure which will save time as direct help will be provided to the needy [7].

There are four types of colors forlabeling: black, red, yellow and green. Black color is applied to the person who has expired; labeling so would indicate no medical treatment required. On the other hand, red labeling communicates the need for urgent intensive care. A person with yellow label requires light medical attention right after the red labeled ones have been taken care of. At last, the green labeled affecties who require very minor emergency treatment are given attention.

Figure 4:Snapshot of situation after first response

After providing medical help, the emergency responders also need the address, name and emergency contact number of the affecties.

Often, when response team is called to a large building, ambulance crews or firefighters' valuable time gets wasted looking for the place of the emergency. Therefore, it would be a good idea to direct emergency responders to the main entrance where the caller/reporter of incident can lead them to the incident.

D. Activities during shifting process of patients from emergency spot to the hospital

As depicted in Figure-5, rescue team provides first aid to the affected victim on way from the incident place to the hospital. Here they need a virtual doctor, who can guide them to expert treatment; especially in case of red labeled affecties. This can be done by applying vehicular ad-hoc network whereby the emergency medical technician can communicate with the Road Side Unit (RSU) and this RSU can communicate with the hospital using Internet.

Figure 5:Snapshot of effective first aid during shifting to the hospital

E. Coordination with different other agencies

Collaboration of efforts within the emergency management organization as well as those outside of the organization is also required. These include government entities (like Army, Police, WAPDA (Water and Power Development Authority), Sui-gas, WASA etc.))and Private sector, non-profit sector (NGO's) and community organizations (Volunteers). Understanding for shared resources through common assistance or pre-positioned contracts will greatly benefit the region as a whole in responding to a disaster [5-6].

F. Community awareness/Training

A glimpse of the community training given at The PES Rescue 1122 Punjab is shown in Figure-6. Although they are running community awareness programs and working on the mission of "saving lives and changing minds" [1], but they should also work on training masses and community volunteers regarding effective BLS (basic lifesaving) and first aid in that areas where it has not started it services. People should be able to give first aid services in the absence of emergency services to save human lives as much as possible.

The dream to develop safer communities will be fulfilled if people are aware and able to do some damage control until the emergency services team gets to the incident area. Rescue 1122 should be able to respond speedily in the face of threats and disasters when infrastructure gets paralyzed and means of communication get dysfunctional as happened in 2005 earthquake in some areas of Pakistan. Citizens' at large need to be trained in emergency management skills since emergency can occur anywhere anytime. Industrial workers, health care providers, community development workers, volunteer groups, government officials and general citizens are being trained in emergency management and lifesaving skills.

Figure 6: Snapshot of community first aid training

G. Response time improvement

Response towards a disaster or emergency situation is very critical to save life and property of the affected people. Early access to an emergency or disastrous situation can provide instant relief. Although Rescue 1122 has maintained

an effective average response time all over Punjab but it can further improve if road conditions and traffic rules violation was to get better too. Post first-aidtreatment, criticalvictims also need AMT (Advanced Medical Treatment) and traffic blockage is a hurdle while rushing the patient for AMT. There should be, therefore, a Dedicated Traffic Line for Emergency vehicles on roads and highways. This can result in a marginal improvement inresponse time as well as shifting towards hospital for Advanced Medical treatment. Another important factor for improved response time is the GPS base location trackers which if installed in every emergency vehiclecan lead the emergency vehicle driver to locate the incident well in time.

4. CONCLUSION

In this research, we have addressed issues like community awareness/training, coordination between agencies, traffic control measures to improve response time and joining hands with volunteers to create conditions at incident area that allow for effective, quick and hassle-free categorization of affecties treatment requirement and first-aid services provision. The proposed solutions for crowd handling through awareness of masses in emergency response, road-widening to shorten response time, GPS trackers installed vehicles usage to find incident area quickly and color labeling technique for instant recognition of severity level by all response teams involved in the activity. If these proposals are implemented then they are bound to add to the contributions of Rescue 1122 towards the citizens of Punjab but also greatly enhance the quality of rescue and response services in rest of the country.

ACKNOWLEDGEMENT

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