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## ‘Entrepreneurial prospect in Road Traffic Trauma Management’

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### ABSTRACT

Road traffic accident is one of the major public health problems. More than 1.5 million people die annually in road traffic accident across the globe. This causes huge socio economic loss to the society. It is important to provide timely care to improve survival of these accident victims. To prevent such problem an integrated approach is required amongst all of its stake holders. In this regard, it is important to involve society and to create entrepreneurship movement in the society. It may be possible to encourage unemployed youth and local businessmen to come up to create road side first aid and resuscitation centres. It is also possible to involve self help groups with local religious leaders to create chain of support system to aid accident victims. In this study various angle of creation of such entrepreneurship movement has been explored. Feasibility study has been done to assess the possible cost benefit analysis of setting up of such unit. Extensive market survey was done with the help of Google and online vendors and suppliers of the life saving equipments to find out the cost of setting up of such unit.

**Keywords:** Road traffic accidents, Trauma care, Entrepreneurship, First aid, Resuscitations.

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## INTRODUCTION

Entrepreneurship is an exchange medium. It offers various individuals the chance to think about the different needs of the society. They can come up with different ideas to invest their resources in a way that satisfy their as well as societal needs. They share some common characteristics like ability to work hard, desire to succeed, be innovative, take risk and have a vision. 'An entrepreneur is one who creates a new business in the face of risk and uncertainty for the purpose of achieving profit and growth by identifying significant opportunities assembling the necessary resources to capitalize them'<sup>1</sup>. In this study it is tried to explore the possibility of creating scope of entrepreneurship in the care of road accident victims. As it is observed that though number of health establishment increases in urban areas, still there is dearth of hospitals as well as medical providers in the rural areas. There is lack of coordinated trauma care systems in this part of the world. Unless involving every part of society by educating them and all stake holders associated with trauma care, it is not feasible to create good care system for accident victims. By arming entrepreneurial skills and first aid training there is scope of self help groups as well as number of first aid centres across national highways. There is lack of studies concentrating entrepreneurship in road traffic trauma care. This research study tries to focus into this aspect. In developing country like India, it is not possible to make trauma centres in all across the highways due to the cost factor of setting up such units. So, Public private partnership is necessary and also social mass movement is required.

### **Literature review-**

More than 1.5 million people die annually in road traffic accidents in this world. It causes serious socio economic impact. It cost 3% of Gross Domestic Product loss annually for the government <sup>2</sup>. It is the leading cause of mortality among people of 15-29 years of age group. So, World Health Organization (WHO) has set up a goal for reducing 20% of the road traffic accidents by 2020 as adopted in the agenda for sustainable development <sup>2</sup>. If common people is trained to impart first aid to take care of trauma victims then much massive change will come which will lead to decrease mortality. It was shown in Iraq that that there was potential reduction in mortality if first aid is given to trauma victims <sup>3</sup>. They evaluated a pre hospital trauma system model. They investigated to which extent a low cost trauma system reduces trauma death where pre hospital transit time is long and to identify specific life support interventions to increase survival. They studied from 1997 to 2006, included 2,788 patients injured by land mines, war and traffic accidents. Non graduate paramedics were the key care provider. There was significant reduction of mortality from 17% to 4%. It is emerged from the

study that assigning life support skills to paramedics and lay people is a key factor for efficient pre hospital care systems in low resource communities.

There was a study in Sub-Saharan region to determine prevalence of the complete trauma care system in Sub Saharan region and secondarily to find out where incomplete trauma care system exist and to categorize and describe those component. Three investigators separately conducted a comprehensive review. They had gone through published and 'grey' literature. Five distinct phases of care emerged as author stated from the literature review. Those are system activation, first responder care, formal prehospital care, emergency transportation and facility based emergency or definitive care. Of forty seven low and middle income countries in Sub Saharan Africa, only South Africa reported the existence of all these five stages of care. The literature indicated the existence of fragmented functional components or phases of trauma care systems in several countries <sup>4</sup>.

A prospective study was done in Mumbai <sup>5</sup> done a prospective study on pre hospital care for the trauma victims. They interviewed 170 clients chosen by random sampling methods from level 1 urban trauma centres. They found that taxi cab is the popular substitute for the ambulance(39.3%).They stressed that reinforcing the existing network of informal providers like taxi drivers and police with training is more cost effective then implementing advanced Emergency medical services. They urged that sharing and helping others is also important in a culture of a society. It is necessary for overall economic survival.

### **Scope of Entrepreneurship in Trauma care:**

There is a lot of scope for an innovative entrepreneur in the trauma care sector as they can foresee potentially viable and profitable opportunities through innovation. There are scope of technological, community based, social, individual, corporate, institutional entrepreneurships. To achieve five phase of care which was stated in literature review <sup>4</sup> one need Public call office and internet (Technological),first responder care by organized or informal community based volunteers (Social), Pre hospital transport such as taxi or two/ four wheelers (Individual, corporate or social) or air ambulances(Corporate or institutional ) , first aid centers (Institutional or corporate/ social or at individual level) and hospitals at corporate, social or at institutional level of entrepreneurship.

Technological entrepreneurship means innovation in technology. Extensive use of internet, setting up of electronic communication centers to transmit accident messages to the nearest hospitals and first aid centers etc and also by equipping first aid centers to transmit data to other stake holders of trauma such as hospitals, ambulance services, insurance providers administrations etc. will help in giving timely care to the victims. Social entrepreneurship occurs when non profit goals are being mixed with business ideas. It contributes society in a

positive manner. Government can create training centers of first aid as well as basic life support in the community and can engage them or encourage them or helping them to set up first aid centres. Similarly first aid ambulance services can be set up in organized level by financing to unemployed youth from bank or government. The famous 'pink ribbon' campaign for awareness of Breast cancer is a famous example of social entrepreneurship. Institutional entrepreneurship is when institutions pursue projects of institutional change<sup>6</sup>. Health care Institutions can explore this challenging area of trauma care by setting up trauma units or helping a locality nearby accident prone areas to become trained in helping victims as well as in setting up of basic first aid and information unit. Corporate entrepreneurship occurs when businesses are involved in innovation. Corporate sector hospitals and medical equipment manufactures should enter this challenging trauma care to help road accident victims with innovative idea and its implementations. One should think of innovative low cost technique and solution in accident care but at the same time the victims should get best and timely care.

This study is trying to explore feasibility of setting up of a low cost basic trauma care unit across the highways at a definite interval and at accident prone areas by encouraging entrepreneurship movement.

#### **Objectives of the study:**

- 1) To find out scope of entrepreneurship in providing timely care to decrease the mortality and morbidity of the road traffic accident victims.
- 2) To do a feasibility study of setting up of a basic trauma care unit comprising various facility for road trauma care by cost benefit analysis.

#### **METHOD**

Extensive market survey was done with the help of Google and online vendors such as alibaba.com as well as local vendors and suppliers of the life saving equipment to find out the minimum possible cost of setting up a basic care unit with required facility to achieve five stage trauma cares and cost benefit analysis done. The study was done in October 2017 and price is mentioned as per the local price in Indian Rupees (INR). The conversion rate will be (1 USD= 65 INR).

#### **RESULTS AND DISCUSSION**

Table 1 shows mainly the cost factor for setting up some units/centres of Road traffic trauma care in a planned manner. It is seen that a complete basic set up is possible at approx. 5-6 lac Indian rupees. It is found from the Table 2 that it is important to know the breakeven point of such unit in order to sustain and how far a person from this career can influence. As there are multiple stake holders involved in this area, so large number of persons will be engaged such

as driver, software engineer or professionals, social worker, unemployed youth to doctor, nurses and paramedics. Hence, large no of employment opportunities will be created and to some extent unemployment problem will be solved.

**Table 1: Cost Analysis of Setting up of a basic road traffic trauma unit**

<b>Fixed Cost</b>	<b>Recurring cost</b>
Hospital bed with saline stand-5000 INR	Telephone bill/internet/01INR/min
Multi parameter monitor-45000 INR/piece,	Room rent/electricity/Small battery for laryngoscope, torch light-8000 INR/Periodic training to locality on basic life support and road safety as well as organizing religious motivational workshop for awareness on road accidents.-5000 INR each session
Suction machine-2500-5000 INR	Staff salary/month-paramedics and nurse-04 in number-24000-32000INR and for MBBS doctor-50000 INR 2 driver -8000INR
Transport ventilator, laryngoscope	Oxygen
,Sterilizing equipment -150,000-300000 INR	All Disposable Items (for example-Bain circuit, face mask, Endotracheal tube ,suction tube etc) and drugs including all circuits
Defibrillator 50000-100000INR	
Ambulance 500000-900000 INR	

**Table 2: Sustainability and recovery**

<b>Fixed cost</b>	<b>Recurrent cost</b>
Patient fees-150-300INR charged in private sector Emergency OPD in most of the hospitals/Health insurance/Empanelment/Private Ambulance charge- 20-50 INR/km at present rate	Disposable item and drugs have 15 to 30% margins from manufacturers and wholesaler as well as retailer.

### Recommendations

- 1- These units have potential to play major role in decreasing road accident mortality and morbidity.
- 2- Government should encourage unemployed youth to take part in these venture by Public private partnership model for which some specific schemes on the said subject can be identified from time to time.
- 3- Community awareness and basic life support training to be provided in the community level and engage them by helping them in this new innovative area by the government.
- 4- Government can fund these suggested trauma units by levying a percentage of road users tax from tax payers of the country and make these first resuscitation procedures free to the victims.

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