



**Ministry of Home Affairs, Govt. of India**

**Project  
On  
*“Golden Hour Trauma Care Center”***

**Prepared**

**By**

**National Police Mission**

**Micro-Mission: 03 (Communication & Technology)**

## CONTENTS

S.No.	Contents	Page No.
1.0	Introduction / Background	1
2.0	Overview	1
	2.1 Project Title	2
	2.2 Vision	2
	2.3 Project Objective	2
3.0	The Project	2
	3.1 Purpose of the Project	3
	3.2 Sponsor	4
	3.3 Financial Benefits	4
4.0	Situational Assessment and Problem Statement	5
5.0	Critical Assumptions and Constrains	6
6.0	Implementation Strategy	6-7
6.1	6.1.1 Accident Mapping	8
	6.1.2 Coordination with Hospitals (Government and Private)	8
	6.1.3 Capability building of drivers and Police Officers	8
	6.1.4 Maintaining Golden Hour Register	9
	6.1.5 The Procedure	9
6.1	6.1.6 Review Meetings	9
6.2	Deliverables	10
	6.2.1 Monitoring the Mean Response Time	10
	6.2.2 Road Accident Victims rescued	
	6.2.3 Reduction in Death	
	6.2.4 Reduction in Mean Response Time	
	6.2.5 Improvement in Participation	
6.3	Stakeholders	11
6.4	Related Projects	12
6.5	Work Plan	12-13

## **1.0 Introduction/Background**

The project is based on a project by the same name being done in City of Salem developed by Shri K.C. Mahali, ADG (Welfare), Tamil Nadu. Proposal has references to this model.

It has been observed over the years that accidents on the roads are the biggest killers and threat to society in India. NCRB Figures show that reported deaths due to accidents on the roads is approximately 4.5 times the deaths due to murders. It is also a fact that with the passage of time and the increasing number of automobile, this figure of death due to accidents on roads is showing an uptrend. Therefore, it is imperative to take steps for minimising these deaths. One step to minimise deaths would be to provide prompt medical care to the victims of road accidents in our cities and town specifically the metros or the cities with more than 10 lakh population and those having higher automobile density so that society is better served and better protected on the roads. Hence, a plan is being proposed through Golden Hour Trauma Care Project to reduce deaths due to road accidents.

Golden Hour is defined in many ways but for this project Golden Hour is the First one hour after the occurrence of an accident/injury. It will be of immense help to the accident victims, if accident victims can be provided immediate medical care during this period. Chances of survival go up many times, if arrangements could be made to extend Pre-hospital Trauma Care to the victim and he could be transported to the nearest medical facility to provide life saving treatment.

## **2.0 Overview**

The emerging challenge of road accident has to be tackled by the active participation of members of public, corporates and the Government Authorities. This scheme is based on a PUBLIC - PRIVATE - PARTICIPATION (PPP) Model. Depending on the population, traffic situation, rate of accident etc., more and more Private Hospitals and Private Ambulance Owners have to be requested to provide their services voluntarily for helping in resolving the problem of death on roads due to accidents by employing and engaging their ambulances to pick up the accident victims from the place of accident after giving them Pre-hospital Trauma Care and transport the victim to nearest hospital free of cost for further treatment during Golden Hour Trauma along with the Government EMRI-108- or similar Ambulances. All the Ambulances private and Government have

to be integrated with Police Communication Network from Police Control Room for exchange of information so as to facilitate the Golden Hour Treatment.

## **2.1 Project Title**

### **“GOLDEN HOUR TRAUMA CARE”**

## **2.2 Vision**

- 2.2.1 To render the medical assistance to the road accident Victim during precious period of Golden Hour.
- 2.2.2 To involve the people on road safety and Trauma Care as Community Police initiative.
- 2.2.3 To reduce the gap between police and public and save the precious life of the road accident victims.
- 2.2.4 To involve the people at grass root level and provide trauma care.

## **2.3 Project Objective**

- i) Objective of Golden Hour Trauma Care is to provide quickest medical treatment to the road accident victims by involving Public – Private –Participation (PPP).
- ii) Co-ordinated approach will be adopted to face the emerging challenges of fatal road accident and deaths on roads by involving the Government hospitals, Private hospitals, Police, Auto drivers and general public.

3.0 **The Project** – With increasing size of automobile including two wheelers, three wheelers and cars on the roads of cities and towns, number of fatal accidents are increasing exponentially with every passing year and injury as well as death is rising due to road accidents. The worst part is that the victims don't get timely help and medical assistance which, if provided, might reduce the agony and death in accidents to a great extent. The emerging challenges of death on the roads and providing timely medical care and assistance has to be tackled in co-ordinated manner involving all stakeholders like Government hospitals, Private hospitals, Private and Government ambulances, Auto drivers, Police and Public. Hence, the capacity building exercise has to be carried out by associating all the

stakeholders to create a working mechanism by combining the local resources under the head of Local Police.

The proposed system and mechanism will have its control with the City Police. Police Control Room of the City will function as nerve-centre to Control, Co-ordinate and Command the local resources available to tackle the challenge of road accidents and resulting trauma and deaths.

### **3.1 Purpose of the Project:**

- i) To improve the safety of the people on the road and in the event of any road accident by providing quickest medical assistant (Golden Hour Trauma Care) in terms of first aid and pre-hospital care.
- ii) To study the accident prone zone (hotspot) where the frequency of accidents is comparatively high and station the Private / Government ambulance for rescuing the accident victims and shifting them to the nearest hospital for further treatment.
- iii) To reduce the response time by increasing the number of ambulances in the accident prone zone.
- iv) To train the Auto drivers of the Cities on first aid and to provide medical aid to the accident victim and shift them to the nearest hospital since autos are available on the roads round the clock
- v) To train the City Police on first aid and Pre-hospital trauma care.
- vi) To eliminate the gap between accident victims and medical assistance by involving voluntary service of the people as an aspect of Community Policing initiative.
- vii) To provide the first aid and ambulance service to the accident victims without cost.
- viii) To improve the *es prit de corps* by co-ordinating all concerned departments and stakeholders.
- ix) To enlist the support and goodwill of the people through Golden Hour Trauma Care, this helps in maintenance of Law and Order.
- x) To improve the image of the police since their work in protecting citizens and providing post accident assistance will project them as good Samaritans.

### 3.2. Sponsor

There is no sponsor from any individual or any organisation to run the project. The Golden Hour Trauma Care project will be run by the City Police with voluntary participation of Private hospital owners, Private ambulance owners, Government hospitals, Government ambulances, Auto drivers, Police and Public without any cost for providing first aid and ambulance services.

### 3.3. Financial Benefits

There is no financial benefit out of Golden Hour Trauma Care project. The entire Golden Hour Trauma Care project is based on voluntary Public – Private - Participation (PPP). The primary objective of the project is to render the voluntary public service without expecting the financial benefit out of it.

### 4.0 Situational Assessment and Problem Statement

Road accident is the reality and it is a frequent phenomenon. As is borne out by the NCRB data produced below in tables 1 and 2, deaths in road accidents are more than four times than the total number of murders in India. As against a figure of *33201 deaths due to murder in 2013, 137423 persons were killed on the roads.*

Table. 1: Showing number of murders in the year 2013

SL. No.	CRIME HEADS	CASES REPORTED	% TO TOTAL IPC CRIMES	RATE OF CRIME	CHARGE-SHEETING RATE	CONVICTION RATE
<b>A) VIOLENT CRIMES</b>						
<b>1</b>	<b>MURDER</b>	<b>33201</b>	<b>1.3</b>	<b>2.7</b>	<b>87.1</b>	<b>36.5</b>
2	ATTEMPT TO COMMIT MURDER	35417	1.3	2.9	91.1	26.6
3	C.H. NOT AMOUNTING MURDER	3380	0.1	0.3	89.2	34.2
4	RAPE *	33707	1.3	5.7	95.4	27.1
5	KIDNAPPING & ABDUCTION	65461	2.5	5.3	66.3	21.3
6	DACOITY	4539	0.2	0.4	79.6	19.7
7	PREPARATION & ASSEMBLY FOR DACOITY	3159	0.1	0.3	97.5	21.1
8	ROBBERY	31927	1.2	2.6	67.5	29.8
9	RIOTS	72126	2.7	5.9	90.4	18.9
10	ARSON	9357	0.4	0.8	64.2	16.2
11	DOWRY DEATHS *	8083	0.3	1.4	94.0	32.3
	<b>TOTAL VIOLENT CRIMES</b>	<b>300357</b>	<b>11.3</b>	<b>24.4</b>	<b>83.3</b>	<b>25.4</b>

Table 2.

**Incidence, Share & Rate of Accidental Deaths by Causes attributable to Nature and Un-natural Causes during 2013**

		2013		
Sl. No.	Cause	No.	% share (w.r.t. All India)	Rate
(1)	(2)	(6)	(7)	(8)
<b>A. CAUSES ATTRIBUTABLE TO NATURE:</b>				
1	Avalanche	52	0.0	0.0
2	Cold and Exposure	946	0.2	0.1
3	Cyclone/Tornado	52	0.0	0.0
4	Starvation/Thirst	109	0.0	0.0
5	Earthquake	9	0.0	0.0
6	Epidemic	57	0.0	0.0
7	Flood	700	0.2	0.1
8	Heat Stroke	1216	0.3	0.1
9	Landslide	264	0.1	0.0
10	Lightning	2833	0.7	0.2
11	Torrential Rains	142	0.0	0.0
12	Other causes attributable to nature	16379	4.1	1.3
	<b>Total (A)</b>	<b>22759</b>	<b>5.7</b>	<b>1.9</b>
<b>B. UN-NATURAL CAUSES</b>				
1	Air-Crash	45	0.0	0.0
2	<b>Collapse of Structure:</b>	<b>2832</b>	<b>0.7</b>	<b>0.2</b>
	(i) House	947	0.2	0.1
	(ii) Building	432	0.1	0.0
	(iii) Dam	33	0.0	0.0
	(iv) Bridge	53	0.0	0.0
	(v) Others	1367	0.3	0.1
3	<b>Drowning:</b>	<b>30041</b>	<b>7.5</b>	<b>2.4</b>
	(i) Boat Capsize	585	0.1	0.0
	(ii) Other Cases	29456	7.4	2.4
4	Electrocution:	10218	2.6	0.8
5	<b>Explosion:</b>	<b>449</b>	<b>0.1</b>	<b>0.0</b>
	(i) Bomb explosion	90	0.0	0.0
	(ii) Other explosion (Boilers etc.)	359	0.1	0.0
6	<b>Falls:</b>	<b>12803</b>	<b>3.2</b>	<b>1.0</b>
	(i) Fall from Height	10822	2.7	0.9
	(ii) Fall into Pit/Manhole etc.	1981	0.5	0.2
7	Factory/Machine Accidents	955	0.2	0.1
8	<b>Fire:</b>	<b>22177</b>	<b>5.5</b>	<b>1.8</b>
	(i) Fireworks/Crackers	462	0.1	0.0
	(ii) Short-Circuit	1690	0.4	0.1
	(iii) Gas Cylinder/Stove Burst	3395	0.8	0.3
	(iv) Other Fire Accidents	16630	4.2	1.4
9	Fire-Arms	1203	0.3	0.1
10	<b>Sudden Deaths:</b>	<b>31278</b>	<b>7.8</b>	<b>2.5</b>
	(i) Heart Attacks	19930	5.0	1.6
	(ii) Epileptic Fits/Giddiness	4752	1.2	0.4
	(iii) Abortions/Child Birth	1078	0.3	0.1
	(iv) Influence of Alcohol	5518	1.4	0.4
11	Killed by animals	998	0.2	0.1
12	Mines or quarry disaster	387	0.1	0.0
13	<b>Poisoning:</b>	<b>29249</b>	<b>7.3</b>	<b>2.4</b>
	(i) Food Poisoning/Accidental Intake of Insecticide	7550	1.9	0.6
	(ii) Spurious/poisonous liquor	497	0.1	0.0
	(iii) Leakage of poisonous gases Etc.	139	0.0	0.0
	(iv) Snake Bite/Animal Bite	8746	2.2	0.7
	(v) Other	12317	3.1	1.0
14	Stampede	400	0.1	0.0
15	Suffocation	2187	0.5	0.2
16	<b>Traffic Accidents:</b>	<b>166506</b>	<b>41.6</b>	<b>13.6</b>
	<b>(i) Road Accidents</b>	<b>137423</b>	<b>34.3</b>	<b>11.2</b>
	(ii) Rail-Road Accidents	1318	0.3	0.1
	(iii) Other Railway Accidents	27765	6.9	2.3
17	Other Causes	45917	11.5	3.7
18	Causes Not Known	20113	5.0	1.6
	<b>Total (B)</b>	<b>377758</b>	<b>94.3</b>	<b>30.7</b>
	<b>Grand Total (A+B)</b>	<b>400517</b>	<b>100.0</b>	<b>32.6</b>

These deaths also constitute a major chunk (34.3%) of total accidental deaths and are 82.5% of total deaths due to “Traffic Accidents”.

Thus deaths due to accident on Indian roads is a bigger threat to the society and society can be made a lot safer and happy if something could be done to reduce and minimise these deaths.

It is established fact that most of the deaths due to accidents on roads happen during initial period after the accident specifically first one hour. These deaths and the trauma to the victims could be brought down to a large extent if the medical help is available during this period of “Golden Hour”.

This situation can be addressed by organising speedy help and care with the cooperation of Government and Private medical resources like hospitals and ambulances and also by creating awareness in public and especially in auto drivers who could be trained and utilised in this work.

## **5.0 Critical Assumptions and Constraints**

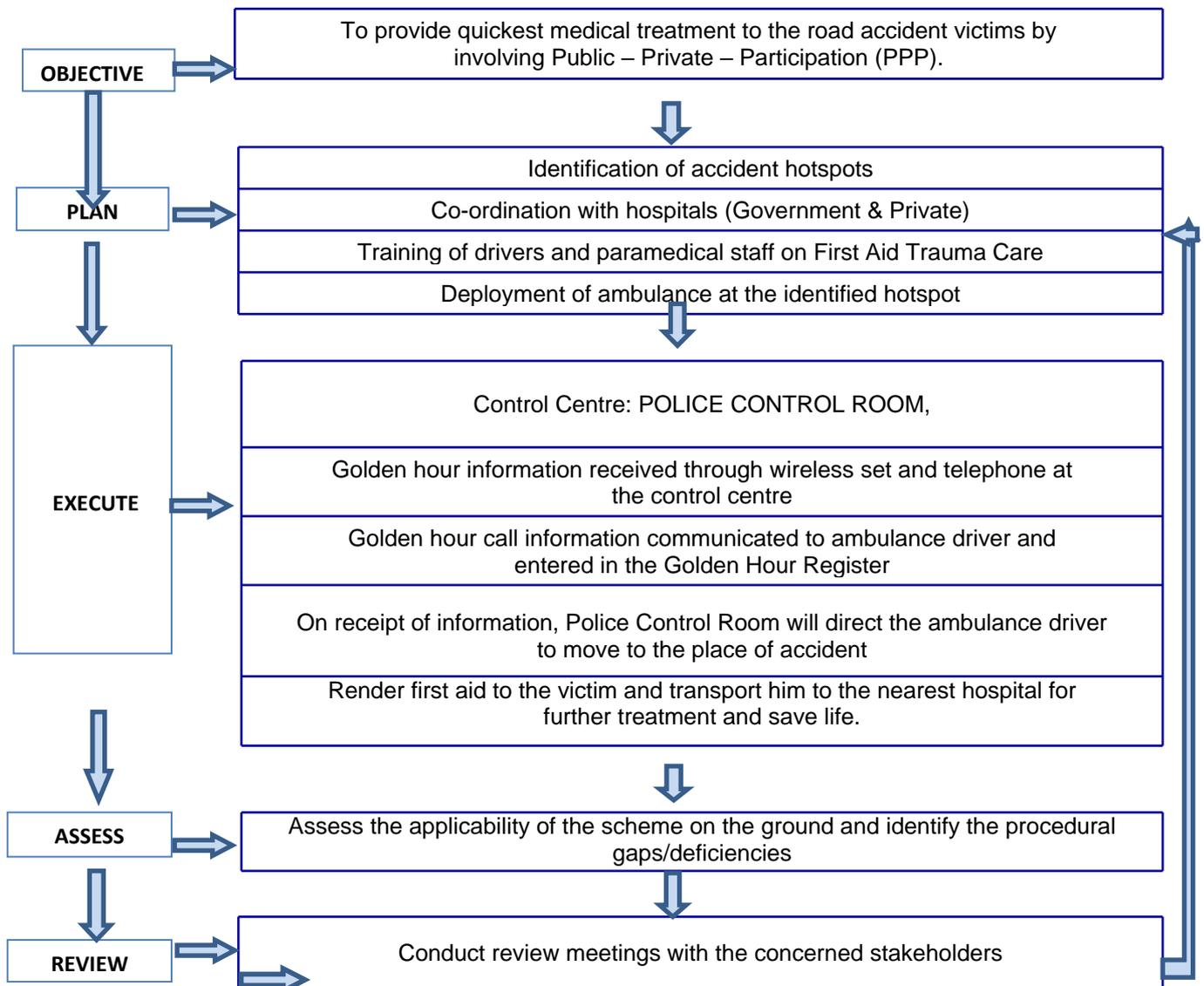
Though, death due to road accident is an increasing phenomenon, but by capacity building and co-ordination with various stakeholders and by involving public, the death due to road accidents can be brought down considerably as has been the experience in city of Salem.

There is no significant constraint in implementing the Golden Hour Trauma Care project. Residents of the city including auto drivers and general public, if involved, will respond positively and will actively participate in Golden Hour Trauma Care project. This project is basically based on the premise that people want to help each other and involve themselves in community work, if motivated and organised.

## **6.0 Implementation Strategy:**

Highly Pragmatic, lucidly designed, people-friendly participatory methodology can be adopted for Golden Hour Trauma Care in as depicted in the flow chart below. Well defined objective with meticulous planning, systematic and organized methodology could be precisely executed on the ground. Periodically, practical difficulties in the system could be assessed and critically

reviewed. Lacunae in the system or any operational difficulties experienced by the stakeholders may be thoroughly analysed, remedial measures recommended and difficulties be rectified immediately.



## **6.1 Implementation strategy**

### **6.1.1 Accident Mapping:**

Accident mapping is one of the most important techniques which is done to find out the accident prone zone. A map of the City / District has to be prepared, clearly indicating the major and minor roads. One year fatality data may be taken from the City / District based on the case diary file. A thorough study has to be done on accident pattern, road condition, type of vehicle, time of occurrence, health condition of driver, mechanical worthiness of the vehicle etc. Whenever, accident takes place on the road that spot may be visited and yellow circle may be drawn. The yellow circle is drawn on the road to indicate that an accident has already taken place so that road users are cautioned to be careful while driving. Secondly, on the spot, study is conducted to find out remedial measures to prevent accident in future. Later on, a hotspot is put on the map corresponding to the ground. Once all the hotspots are marked on the map, a particular pattern will emerge which will indicate the accident prone zone. Ambulance has to be stationed at the stretch of accident prone zone so that the “Golden Hour” time can be reduced.

### **6.1.2 Coordination with Hospitals (Government and Private)**

Meetings will have to be conducted with the hospitals as well as Ambulance owners both Government and Private Hospitals and convince them to voluntarily resolve to provide “Golden Hour” treatment to road accident victims free of cost in association with City Police.

### **6.1.3 Capability building of drivers and police officers:**

Police officers and Auto-drivers are the first Responders in the event of any accident besides the bystanders. Therefore capability building programmes on Pre-hospital Trauma Care Training for Auto-drivers and police personnel have to be carried out in coordination with the associated hospitals and other related experts from the similar field.

#### **6.1.4 Maintaining Golden Hour Register:**

Golden Hour register will be maintained in the Police Control Room. This register will contain each and every detail regarding the services rendered for each case. The data in the register can be analysed to calculate the mean response time for each accident case handled under this scheme.

#### **6.1.5 The Procedure**

- i) When, an accident occurs on the road, the information will be communicated to the Police Control Room through VHF/ Wireless communication channel or through Police Control Room Phone No.100.
- ii) The time of accident and place of accident will be recorded and nearest ambulance will be directed to pick up the victim. The Police Control Room will have record of the Phone numbers and Cell Phone numbers of Hospitals as well as Ambulance Drivers.
- iii) Immediately, on receipt of information, Police Control Room will direct the Ambulance Driver to move to the place of accident and render Pre-hospital Trauma Care to the victim and transport him to the nearest hospital for further treatment and save life.

#### **6.1.6 Review Meetings**

Deaths due to accidents can be further reduced by making thorough field study, collecting past records/data, critically analysing the data, sustained planning and co-ordination with stakeholders. Every month, Golden Hour Trauma Care review meeting should be conducted in the office of the Commissioner of Police, of the concerned city wherein all stakeholders sit together to review the mean response time along with City Police and Government Doctors. All problems faced by them may be discussed, immediately action may be taken based on discussion and field experiences to improve the system.

## **6.2. Deliverables:**

Following benefits will accrue by implementing the project:

### **6.2.1 Faster help to the accident victims:**

The road accident victims will not have to worry about immediate medical care because the project when implemented will generate a well oiled system which will take care and provide speedy help to the needy on the roads

### **6.2.2 Reduction in number of deaths:**

The system will result in reduction in number of avoidable deaths on the roads since medical care will be available to the victims when it is really required on urgent basis. Even if number of deaths could be brought down by 50%, this will be largely helpful to the society.

### **6.2.3 Police Community Partnership:**

Since the project envisages involving Private Hospitals, ambulances on voluntary basis besides Govt. Hospitals, General Public and auto drivers, it is expected that a society with values of cooperation will be created and this cooperation could be further utilised in some other social initiatives.

### **6.2.4 Reduction in mean response time:**

In the beginning of the project, there may be some problems and providing medical care could be a little sluggish. But with the experience, a system will evolve where mean response time will also come down and the victims will get faster care.

### **6.2.5 Identification of hotspots:**

A bigger benefit of the project will be that the spots where accidents are more likely (hotspots) will be clearly identified in a city and by giving special attention lowering the number of accidents can be ensured at these spots in terms of deploying more resources.

## 6.3 Stakeholders

Golden Hour Trauma Care project has various stakeholders. The project will need active participation of all the stakeholders. The followings are the stakeholders of Golden Hour Trauma Care.

- i) **Private Ambulance Owners** – As many as possible, Private Ambulance owners of City have to be involved to pick-up the road accident victims voluntarily and free of cost from place of accident to the nearest hospital and admit them for further treatment, after giving first aid.
- ii) **Private Hospital** – Directors of the Private hospitals have to be pursued to agree to admit the accident victim till the arrival of the Police or relatives of the victims. Later on, relatives of victim may shift the patient to Government hospital or other specialised hospital.
- iii) **Government Ambulance and Government Doctors** – All big Cities have Government General Hospital with trauma care facility. Specialists in Trauma Care are also available to give treatment to the accident victims. At many places Government sponsored EMRI-108 Ambulance is available with life-saving equipment, medicine and Para-medical staff to render immediate medical assistance to the road accident victim. This facility can be included in the project.
- iv) **Auto Drivers** – In every big city, Auto-drivers are available on round the clock basis. They can be motivated and coopted in the system to help the victims. Auto drivers can be trained in First Aid ( Pre-hospital trauma care). They, if trained and motivated could be of huge help in picking up the accident victims round clock and admitting them in the nearest hospital.
- v) **City Police** –City Police can be trained in First Aid (Pre-hospital trauma care). A trained police force will be useful in rescuing, giving First Aid and admitting the accident victims in the nearest hospital. City Control Room will be designed to co-ordinate the entire operation of Golden Hour Trauma Care.
- vi) **People of City** – People of City will also positively respond and will actively participate in activities of Golden Hour Trauma Care Project.

## 6.4 RELATED PROJECTS

Many cities might be having EMRI-108 Ambulances. Due to the availability of EMRI -108 ambulance service, people may be getting quickest ambulance service and they might be benefitting out of it. EMRI-108 Ambulance has State-wide network and availability. However, in Golden Hour Trauma Care Project, Participation of Private ambulances is sought for multiplying the number of ambulance and reduce the mean response time to render quickest medical assistance to save life of critically injured road accident victims.

## 6.5 WORK PLAN

Prior to implementation of the Golden Hour Trauma Care Project, meticulous planning will have to be made to execute the people-friendly project.

### **i. Starting the project:**

- a) To start with, an accident map of the city will be drawn based on number of accidents and deaths in previous five years. Based on this fatality data and frequency of accidents at different locations, hotspots have to be decided put in the map to locate the accident place.
- b) Private Hospitals and Private ambulance owners will be motivated to contribute in the system.
- c) Depending upon initial availability of the ambulances (Private and Government), these will be deployed according to priority decided by frequency of accident at a place and the grading of the accident prone zone.
- d) More no. of the Police personnel will have to posted in the City Police Control Room to handle VHF-set (wireless set), Phone and Cell phone for quick communication during Golden Hour.
- e) Golden Hour Register will be created and maintained in the City Police Control Room to record the Response time.
- f) Road safety awareness campaign will be conducted.
- g) This will be done initially for six months.

**ii. Review and monitoring:**

After establishing the system in first six months, the work will be reviewed to find out mean response time and the methods to reduce it by inducting more and more Private Hospitals and ambulances who will be ready to join in view of the good work done.

**iii. Inducting and training Auto drivers:**

Auto drivers will be motivated and will be trained in first aid, pre-hospital treatment of accident victims and shifting them to nearest hospitals.

**iv. Training Policemen:**

Alongwith the auto driver, city police will also be trained in various activities of the system so that they could take control of the activities and coordinate with all stakeholders.

**v. Continuous review and monitoring mechanism:**

A mechanism will be created for continuously monitoring and reviewing the emerging problems and their solutions. The ways to improve the system by providing quickest possible help by evolving better strategies will also be found out.