

POST CRASH MANAGEMENT

Guidelines for Operation of Emergency Ambulance Vehicles in Kerala State

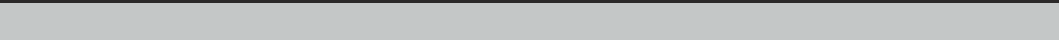


KERALA ROAD SAFETY AUTHORITY

Established under KRSA Act 2007 by Government of Kerala

Trans Tower, Vazhuthacaud, Thiruvananthapuram 695 014

Tel & Fax : +91 471 2336369 E mail : ksraoffice@gmail.com





MESSAGE

Adv. Antony Raju
Minister for Transport

Road accident is a major social, economic and health problem facing the humanity. Every year, 13.5 lakh people die on roads and nearly 5 crore people suffer injuries due to road crashes worldwide. Globally, India recorded the highest fatality of 1.5 lakh people with another 4.5 lakh injuries each year. In the case of Kerala, over 3,400 road deaths were reported in 2021 and as many as 36,800 suffered injuries. The fatalities and severity of accidents can be reduced, if timely medical attention is provided to the victims during the critical period.

The role of emergency vehicle is very important in saving the life of crash victims on road. In Kerala, the government funded 108-Ambulance vehicles provide a valuable service in transporting the victims to the nearest hospital. In addition to this, private ambulances do play a major role in saving lives of crash victims. There are certain issues pertaining to the operation of ambulance vehicles in Kerala. Lack of coordination among private ambulances, over-speeding tendency of drivers, non-standard use of sirens / flash lights, over-charging from victim's family, etc are some of the issues that need to be addressed.

Realising the importance of this, Kerala Road Safety Authority has prepared "Guidelines for Operation of Emergency Ambulance Vehicles in Kerala State" in consultation with stake holders. It is hoped that this booklet will serve as a guide for ambulance service providers in providing better quality of service to the public. Currently the initial 60-minute period is considered as 'Golden hour' during which time, if timely evacuation and medical assistance is provided to victims, several lives can be saved. The present average response time of 25 minutes can further be reduced to Platinum Period, i.e., less than 20 minutes, if private and public ambulances are networked and integrated with trauma care hospitals in the State.

I am sure that this guideline will serve as a useful document for post-crash management in the State, resulting in saving lives cut short on road. I place on record, my appreciation for the efforts taken by Technical Support Group of Kerala Road Safety Authority in bringing out this Guidelines in booklet form.


ANTONY RAJU

Guidelines for Operation of Emergency Ambulance Vehicles in Kerala State

1. Preamble

The State of Kerala has a fleet of 8800 emergency ambulance vehicles on road by 2021. Public institutions like Govt. Medical College Hospitals, District & Taluk Head quarter Hospitals, Trauma Care Centres, Community Health Centres, and private entities like Community Service Organisations, NGOs, Trusts, Societies etc. operate ambulance services to transport accident victims/sick patient to nearby hospitals.

Incidences are reported when a speeding emergency vehicle hit a passing vehicle, causing serious injuries and fatalities on the road. The reasons are over-speeding of ambulance drivers, hazardous overtaking, intoxication of crew etc. Further, complaints regarding use of sirens and warning lights while transporting dead body and use of ambulance vehicle for unauthorized purposes.

The rules pertaining to Fitness of ambulance vehicle, qualification of driver and dress code for crew etc. are not strictly followed in practice. Many ambulances do not follow colour code, GPS tracking facility and Enforcement officers are reluctant to stop emergency vehicle for checking, purely on humanitarian and medical urgency considerations

Realizing the need for regulation of ambulance vehicles, a Guidelines for Operation of Emergency Ambulance Vehicles in Kerala is felt necessary.

2. Ambulance Services by Government agencies

Government of Kerala launched a project called "KANIV-108" (Kerala Ambulance Network for Injured Victims) as part of trauma care management to save lives of people. As many as 315 Basic Life Support (BLS) ambulances are deployed near Accident Blackspots so as to minimize medical response time.

KANIV-108 ambulance vehicles are deployed in two service timing: (i) 12 hour servicing; and (ii) 24 hour servicing. The time between 8:00 a.m. - 8:00 p.m. when maximum number of accidents happen, all 315 ambulance vehicles are deployed, while between 8:00 p.m.- 8:00 a.m. only half the fleet are operated. These vehicles are fitted with Oxygen cylinders, Suction Pumps, Pulse Oximeter, Nebulizer, BP Apparatus, Scoop Structure, Cervical Collar, Spine board etc. All services are done under the supervision of a trained Emergency Medical Technician (EMT). These are equipped with Medical instruments, Trauma Care devices, Driver and a trained Emergency Medical Technician.

3. Ambulance vehicles operated by Private entities

There are a number of NGO and private entities who provide ambulance services to needy people. There are a few aggregated ambulance service providers in the state namely:

- i) Active Network Group of Emergency Life Savers (ANGELS), a Kozhikkode based Ambulance Service Provider who operate mostly in Malabar region;
- ii) Indian Institute of Emergency Medical Services (IEMS), an institution having operations in different parts of the State;
- iii) Indian Medical Association (IMA), with a common Mobile No: 9188100100.

In addition, private ambulances are operated by various Societies, Political fronts, Trusts, Associations, and Private hospitals.

4. Types of Ambulance and Standardisation

Except the state-run 108-Ambulances, there is no standardisation of ambulance design followed amongst private sector ambulances. The interiors of the ambulances are not ergonomically designed. The oxygen system used in most ambulance is not certified for medical purposes. Many private ambulances are retrofit of Maruti Omni or LMVs.

According to National Ambulance Code, four variants of road ambulances are prescribed.

Type A - Road Ambulance / Medical First Responder

Road Ambulance designed to provide emergency service, out of hospital medical care to patients, when stationary. This vehicle may be any CMVR approved Category M or L vehicle suitable for the terrain to be used, but will not have the capability to transport patients in supine state or provide them medical care inside the vehicle.

Type B - Road Ambulance/ Patient Transport Vehicle

Road ambulance designed and equipped for the transport of patients who are not expected to become emergency patients.

Type C - Road Ambulance: Basic Life Support Ambulance

A vehicle ergonomically designed, suitably equipped and appropriately staffed for the transport and treatment of patients requiring non-invasive airway management / basic monitoring.

Type D - Road Ambulance: Advanced Life Support Ambulance

A vehicle ergonomically designed, suitably equipped and appropriately staffed for the transport and treatment of emergency patients requiring invasive airway management / intensive monitoring.

Type E - Vehicle to carry Dead Body (Hearse)

Generally, Ambulances are used to carry Dead Bodies as well as patients. So it is recommended to classify and to restrict patient carrying ambulances for such purpose only. Ambulances used for carriage of dead bodies shall not be allowed to carry patients. Ambulances used for carriage of dead bodies shall be painted in 15 CM width Navy Blue ribbon on the middle of the vehicle outer body on all sides (Front, Rear, Left and Right) on a Milky White background. Only Blue / Purple revolving light without siren is recommended for these vehicles. Mobile freezer facility in addition to structure facility shall be made optional in these vehicles. Rule to be formulated and separate taxation tariff may be introduced for this "Hearses" category vehicle.



Basic Life Support (BLS) Ambulance



Advanced Life Support
(ALS) Ambulance



Hearse Ambulance

4.1. Prescribed Uniform for the Driver and Supporting Staff

Presently the ambulance drivers/crew are using white colour uniform. It is suggested that either white colour or greyish blue jackets can be used for ambulance drivers and supporting crew in ambulances.



4.1. Sirens

Most ambulances are fit with electronic sirens, producing a range of different noises which ambulance operators use to attract the attention of motorists ahead and get priority access over other traffic.

In Type A, B, C and D Road Ambulances, all siren loudspeakers should be mounted on the front of the vehicle. The main sound direction must be in driving direction. Permitted are wail and yelp signals with a sound level of 110dB(A) to 120dB(A). The sirens should be tested in accordance with IS 1884 (though not covered in the standard). The frequency range must be at least one octave and should be between 500Hz and 2.000Hz. An additional electronic air horn can be used. Further, there should be a public address system that can be worked at all times ergonomically from the driver's seat. The siren switch can only be used if the warning lights are on.

4.2. Colour code for Ambulance

It should be as per AIS-125 which must be strictly followed. An extract of the specifications as contained in AIS125 is shown in Annexure.

The Ambulance Conspicuity Code is split into six sections.

- (i) Colour
- (ii) Conspicuity Improving Items

- (iii) Emblems
- (iv) Warning Lights
- (v) Sirens
- (vi) Recognition of personnel

Colour

The basic colour of the complete exterior should be brilliant white, RAL-Code 9010, front, rear and side bumpers included. The colour should be weather resistant and withstand daily cleaning and washing.

4.3. Identification code for each ambulance

A unique code can be given to an ambulance based on the type/category of ambulance and with district code in which it is registered. It can be done as similar to the bonnet codes given to tanker lorries for easy identification

4.4. Training for Ambulance drivers

Mandatory basic training should be given to all ambulance drivers from recognized driver training centers. In addition to this, a combined training by IMA and MVD may be provided to drivers once in a year and a Certificate may be issued.

Trained paramedical personnel with experience in handling casualty patients are required while shifting of patients. Custom made training to Medical Technician may be provided before deploying them in ambulances

All the ambulance operators and the employees need to complete a certified 'Emergency Vehicle Operators Course' (EVOC), similar to syllabus followed by agencies like ANGELS (Active Network Group of Emergency Life Savers) or any other approved Authority. The syllabus covers basic life support skills, basic etiquettes of driving and traffic rules, and a short course on Emergency tips to manage a vehicle at times of breakdown. This will be a 30 hour course, enabling them to become real life savers. This has been followed since 2011 and highly successful in saving lives. The ambulance drivers may be renamed as '*Rescue Pilot*' or '*Rescue Captains*'. The EVOC Course Certificate needs to be displayed in all ambulances. This will help to build the confidence of the public.

4.5. Qualification of drivers

A minimum qualification of SSLC to be made compulsory for an ambulance driver

4.6. Police clearance certificate

Compulsory Police Clearance Certificate should be made mandatory to appoint a person as a driver of an ambulance and the same should be updated once in two years of their service.

4.7. Minimum driving experience

A minimum of 3 years LMV driving experience should be made mandatory for qualifying as a ambulance driver.

4.8. Fitting GPS and tagging to the software Suraksha Mitr.

For the enabled safety and easy service tracking of ambulance, fitment of GPS system and VLTS tracking should be made mandatory for ambulances. The fitting of VLTS device and tagging of the same should be done for each and every ambulance for easy tracking and traceability. The fixing of GPS device in ambulance has already been started in Ernakulam district as per the direction of District Disaster Management Authority in the year of 2016 Also the basic facilities in ambulance need to be improved as per AIS 125 standards.

5. Safety concerns of ambulance services

Once a vehicle is registered as Ambulance with RTO Office, there is no control over the use of ambulance except at the time of renewal of fitness of vehicle. Even during routine police checking ambulances are spared. It has been reported that many ambulances are used for unauthorized purposes and speed past the traffic signals and one way street. There are no differences between an ambulance transporting critically-ill patients or patients with minimal injuries or transporting dead body.

5.1. Over-speeding tendency

Ambulance drivers resort to over-speeding in order to transport the patient to hospitals as quickly as possible. Though speed on highways is limited to 100 Km/hour for motorists, there is no restriction on speed for ambulance drivers.

Ambulance vehicles are generally not booked for traffic violations like over-speeding, red light jump, wrong overtaking manoeuvres, travelling in one-way streets etc.

5.2. Road Worthiness of Ambulance Vehicle

Validity of ambulance is permitted till it is road worthy. Many countries have statutory provisions to test road worthiness. But in India, such provisions are not in place. Efforts should be made to set up testing centres across the country to conduct tests to ensure road worthiness of ambulance vehicles.

Routine check-up by RTO biannually, for new vehicles up to 8 years, and beyond that period, annual checking should be made mandatory.

5.3. Road Tax exemption for Ambulances

As per the Motor Vehicle Taxation Rules, all Ambulances operated for charity purposes are exempted from collection of road tax.

Generally, there is no enforcement-check on ambulance on transit either by Police or by Motor Vehicle Inspectors. Generally, Ambulances are not booked for petty/compounding fee challans in enforcement cameras.

5.4. Unauthorised use of Ambulance vehicles

Ambulances are, at times, used for unauthorised purposes. It is used widely for transporting medical professionals or for transporting medicines and hospital supplies.

Ambulance Siren is used when no sick person or injured patient is transported. Louder noise generating siren and variety of colour lights are generally used.

There are no standardisation in respect of fixing stickers, curtains and cooling papers. Similarly, number of attendants permitted in an ambulance is to be specified. In many cases, overloading of patient's attendants are seen in ambulances.

Health Department have fixed fare charges for ambulance vehicles under different institutions. Allegations of overcharging is widely received. Actions on such cases need to be formalised. A chart showing amount to be collected for specified distance of travel to be exhibited in all private ambulances.

6 Fitment of safety features in ambulance vehicles.

A Standard Operating Procedure for ambulance services to be formulated and implemented in the State to regulate and ensure safer mobility of ambulance vehicles. Special training and certification may be made

mandatory for ambulance drivers after undergoing training on first-aid procedure, trauma care, safe driving practices, etc. Only drivers with 'Ambulance Driver's Certificate' should be allowed to drive ambulance services. Refresher training should be given on defensive driving, safe driving habits, road rules etc.

GPS fitted Vehicle Tracking & Monitoring System should be made compulsory for all public service ambulances. Vehicle Location Tracking (VLT) system hardware specifications and features should be in accordance with AIS-140 standards. In addition, 'Over speed buzzer' with audio warning should be fitted to warn the driver. For accurate speed warning, speed zone mapping of entire road network in the State should be made available. Any continuous speed limit violation (say; 3 over-speed alerts within 10 minutes) may be considered as a traffic rule violation and the driver need to be advised to undergo training cum counselling.

Ambulance drivers and other hazardous vehicle drivers, driving licence need to be periodically checked, after considering their movement tracking data. Good drivers can be rewarded, while unsafe drivers may be blacklisted.

In view of various safety issues identified, it is recommended that some of the existing practices are to be modified to bring ambulances under regulatory mechanism. Proposed modification suggested for Ambulance vehicles operation is shown in Table attached.

3. Summary

In recent years, a number of road crashes are reported involving emergency ambulance vehicles with other vehicles. This necessitates a regulatory mechanism for checking vehicle related features, driver/crew related regulations and control of bad driving habits of ambulance crew.

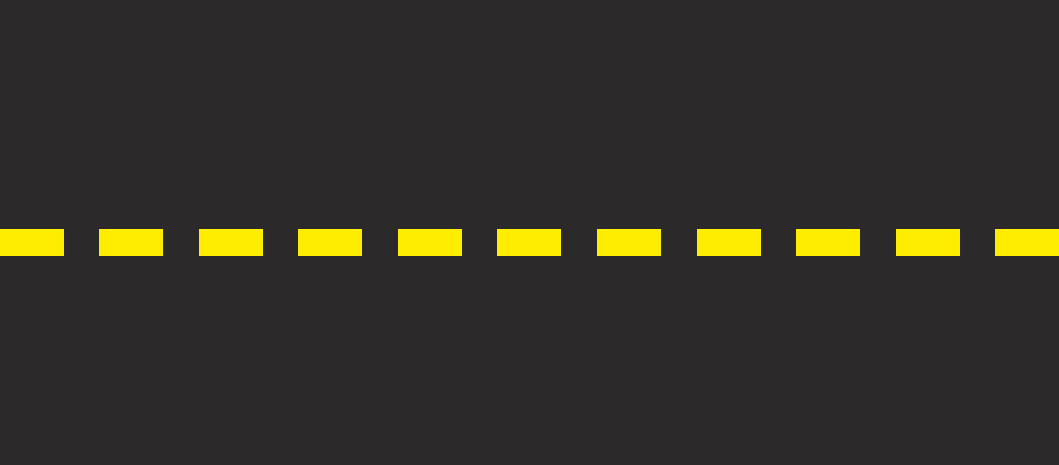
In view of the above issues, "Guidelines for Operation of Ambulance Services in Kerala" is prepared. It is hoped that the document will serve as a good guide for ambulance service providers and aim to reduce the Response Time to acceptable levels. Currently the initial 60-minute period is considered as 'Golden hour' during which time, if timely evacuation and medical attention is provided to victims, thousands of lives can be saved. The present average Response time of 25 minutes can be further reduced to less than 20 minutes so as to save more lives dying on the roads.

Annexure

Modifications suggested for Ambulance Vehicles in Kerala.

Sl No	Existing provision	Modifications required
1	Vehicle Related	
a.	Uniform Colour & body colour code	Strict adherence of uniform colour and body code (As per AIS -125)
b.	Classification of ambulance based on facilities/equipment	Ambulance type should be legibly written on the side (left and rear)
c.	Curtains & Cooling papers	Should not be allowed in Type 1 and 2
d.	Road worthiness & alteration of old vehicles. Many private ambulances are retrofit of Maruti Omni or LMVs.	Limited to 15 years (similar to public transport vehicles) More than 15 year old vehicle should not be permitted. Conversion of old four wheelers to ambulances should not be permitted while registering a vehicle
e.	Warning Alarms Intensity of noise levels	The intensity of sirens to be specified and checked on road. Different types of alarms to be used while <ul style="list-style-type: none"> a. Travelling without patient b. Moving with patient who need first aid c. Moving with patients on critical care d. Onward trip to pick up patients e. Moving with dead body – no siren or alarm to be used
f.	Specification on use of warning lights	Specify colour of lights while <ul style="list-style-type: none"> a) Moving without patient b) Moving with patient who need first aid c) Moving with patients on critical care d) Onward journey to pick patients e) Moving with dead body
g.	Fitting GPS and RFID tags	Should be made compulsory
h.	Networking	State-wide Ambulance operation and management portal/app where the vehicle details, driver registration and certification details, operation, hospital details can be entered and monitored to be developed/ implemented. Area wise distribution of ambulances are required to ensure that nearest vehicle picks up the victim within 10 to 20 minutes Switch over to single application-based networking platform

Sl No	Existing provision	Modifications required
I	Ambulance for dead body transport	Dead body transport is in special vehicles called HEARSE. A name board should be placed in front and on rear side indicating – HEARSE- dead body transport vehicle. A black flag in front left side and centre top side. On the reverse of the board can be ambulance. It can be used during other occasions . A separate colour code for “Hearse” ambulance may be prescribed
j.	Safety features	Vehicle to be fitted with all safety features including fire fighting equipment
2	Driver/crew related	
a.	Qualification of Driver	A pass in SSLC and the driver’s has to compulsorily pass a certified training course from an authorised centre and also to get endorsement pass practical sessions conducted by MVD. License should be renewed annually. Special emphasis should be given to trauma care, mental health and stress management and driver behaviour etc.
b.	Dress code	Mandatory dress code for driver and crew as per National Ambulance Code.
c.	Attenders in ambulance vehicles	No of passengers permitted to accompany ill –patient should be limited to two persons
d.	Medical Technician	Atleast one medical technician with hands on training in first aid and trauma care should be available. Refresher training to be given at regular intervals
e.	Log book & patient case report	Should be made compulsory . Trip details to be monitored and cross checked
3	Other regulations	
a.	Tax exemption for Charity purposes	Impose Penalty if misused for other purposes - with a fine of Rs5000/- and for subsequent violations with or without suspension of registration . Provision for cancellation of licence of drivers if repeated violations are found
b.	Exemption of ambulance from petty challan	Ambulances also to be examined for selective speed checking
c.	Checking for alcohol abuse,	Breathe Analyser in hospitals to check alcohol/drug abuse of ambulance drivers while arriving and departing to pickup patients
d.	Group Insurance scheme	A group insurance to be introduced for all ambulance crew members
e.	Priority for ambulance	Modifications in existing signal system for ensuring Priority for ambulances at intersections



ഗുഡ് സമരിറ്റൻ മാർഗ്ഗ നിർദ്ദേശങ്ങൾ
റോഡപകടങ്ങളിൽ ഇരയാകുന്നവരെ സഹായിക്കുവാൻ
സ്വയം സന്നദ്ധരാകുന്നവരോട്

ആശുപത്രി അധികൃതരും പോലീസ് ഉദ്യോഗസ്ഥരും
യാതൊരു വിവേചനവും കൂടാതെ ആദരവോടുകൂടി
പെരുമാറേണ്ടതാണ്.

തങ്ങളെ സംബന്ധിച്ച വ്യക്തിപരമായ കാര്യങ്ങൾ ഇവർ
വെളിപ്പെടുത്തേണ്ട ആവശ്യമില്ല. ഇവരെ സംബന്ധിച്ച വ്യക്തി
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ലഭ്യമായ വിവരങ്ങൾ നൽകിയതിന്ശേഷം ഇവരെ
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പൊതുജനതാല്പര്യാർത്ഥം
കേരളാ റോഡ് സുരക്ഷാ അതോറിറ്റി

Good Samaritan Guidelines Those who volunteer to help the Road Accident Victims

Should be treated respectfully with no discrimination, by
the Police and Hospital authorities

Need not reveal their identity (except Eye Witness) and the
Police should not compel to disclose the personal details.

They may be to leave after passing the available
information

Issued Public Interest
Kerala Road Safety Authority



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Trans Tower, Vazhuthacaud, Thiruvananthapuram 695 014
Tel & Fax : +91 471 2336369 E mail : ksraoffice@gmail.com