

Abstracts

Road crashes and deaths in India: Need for integrated policies and programmes

G.Gururaj
National Institute of mental Health and Neuro sciences
Bangalore
guru@nimhans.kar.nic.in

Recent years have witnessed rapid motorisation, urbanisation, industrialisation, migration and other changes consequent to globalisation and liberalising economic policies of successive governments in India. An accompanying effect of these changes is the increasing road crashes and deaths due to lack of safety policies and programmes. During 2007, nearly 1, 50,000 persons lost their lives and an estimated 5 million persons have been hospitalised across the country. Data from the recent Bangalore RTI / Injury surveillance programme indicate that 30 % of hospitalisations are due to Injuries, with a preponderance of RTIs. Majority of the killed and injured are young persons in their economic productive years and are pedestrians, two wheeler riders / pillions and bicyclists. Nearly 1/3rd of disabilities are due to RTIs and need care and services for long periods of life. The social and economic costs are high, though unmeasured. It is estimated that RTIs alone account for economic losses of Rs.55, 000 crores in Indian region, equivalent to 3 % of GDP. The psychological suffering of individuals and families are hard to measure and are better realised with interaction of survivors.

Undoubtedly, deaths and injuries on roads are manmade disasters. It is common to see unscientific growth and planning of cities and highways, improper focus on public transportation and umpteen numbers of human behaviours on Indian roads. Safety has not been given importance in our development and expansion of mobility and motorisation networks. Some of the identified risk factors like non usage of helmets and seatbelts, drinking and driving, increasing speeds, improper design of highways, and others contribute in a significant way. Trauma care is more of an urban phenomenon and is riddled with complexities, including unregulated participation by private sector and increasing costs. Majority of people injured on highways and rural / urban roads reach hospitals at later stages, do not receive first aid, are referred from hospital to hospital and characterised by absence of triage. Poor status of rehabilitation services delay return of the injured persons to their optimal functioning after a crash and families go through unexpected misery and suffering.

Road crashes are predictable and preventable and can be controlled effectively, if safety of people on roads is given importance by government, professionals, vehicle manufacturers and the civil society. This requires a Safe systems approach with

importance given for making safe roads and safe vehicles to make people safe in road environments in a coordinated and integrated system. Strict implementation of even existing laws on helmets, drinking and driving, speed control, pedestrian travel, day light running by vehicles, proper design of roads and highways, driver training can effectively contribute for reducing crashes. Prehospital and emergency care will help in saving lives and reducing severity of injuries. An integrated approach with disaster planning and preparedness is required to strengthen trauma care, especially in rural areas. Enforcement, Engineering, Education, Emergency care and Evaluation of these approaches are urgently required in India to reduce the growing toll of road deaths and injuries.

Pedestrians, Cyclists and Non-motorised Transport in India: Road Safety challenges and possible solutions

Nalin Sinha
ITDP, New Delhi
nalin@itdpindia.org

In India pedestrians, bicycles, cycle-rickshaws and other non-motorised vehicles (NMVs) have very large presence in urban areas including most metro cities. In spite of the rapid growth in number of motor vehicles in the country, Non-motorised Transport (NMT) has significant modal share in city traffic and continues to grow due to its affordability, flexibility and various environmental, social, and economic benefits to a large section of our society. Walking, cycling and using cycle-rickshaw are still common man's transport to commute and carry goods for short to medium distance journeys in most Indian cities and towns whether it is high population metros or tier-II & III cities in India. At the same time more than 50 percent of accident victims and fatalities on roads happen to be pedestrians, cyclists and other non-motorised vehicles in our cities. Pedestrians and NMT users mostly belong to low and middle income group and unlike motor vehicle industry they are unorganised and don't have much influence in road safety, traffic and transportation matters. NMVs and NMT have never received their due recognition, space and inclusion in policy matters, planning and road infrastructure development thus resulting in high rise in road deaths and other traffic problems year after year in almost every Indian city. Surprisingly NMT neither comes completely under the purview of Motor Vehicles Act 1988 nor there is any law to clearly outline and ensure the licensing of NMV drivers; registration & control of Non-motorised vehicles; imparting driver training programme; educating pedestrians and NMV drivers on road rules & traffic signs; prosecuting & penalising violators; and managing the operations of cycle-rickshaw or any other vehicle.

NMT is safer, convenient and effective means for short distance transport. It acts as very efficient feeder service to public transport system, Buses, MRTS, Metro Rail, railways etc. Moving at a slow pace, chances of an accident being caused involving NMVs is also minimal. Replacing them with motorized vehicles and trips may lead to an increase in further traffic accidents, man made disasters, road congestion, consumption of fossil fuel, air pollution, and parking problems in the long term. Government of India's Urban Development Ministry has, through its Delhi Master Plan 2021 and the National Urban Transport Policy 2006, emphasized the greater use of non-motorised modes of transport. In view of the rapidly increasing number of personalized motor-vehicles, road accidents and air-pollution, and with greater concern for climate change, a lot of foreign countries have acknowledged the benefits of NMT and ensuring its

safety on roads. Also a large number of Indian and foreign traffic experts have also been advocating for equitable sharing of road space and segregation of lanes for motorized and non-motorized transport to bring down the number of road accidents and deaths amongst the vulnerable road users. Through this paper, an attempt has been made to highlight the problems and serious concerns related to road safety and fatalities of pedestrians and non-motorised transport users in Indian cities and discuss various options and remedies to tackle this issue.

Road accidents - The man made disasters

Shaheriar B. Zaveri and Kishor D. Joshi
Vadodara, Gujarat
sbzaveri@gmail.com

There is no provision in Motor Vehicles Act to curb wrong habits of driving like 1/ wrong use of signals; 2/ misunderstand or ignore markings painted on road; 3/ give signal to be overtaken at wrong time and 4/ lack of knowledge of lane driving in case of 4 lane or 6 lane Highway or Express way. Ignorance about driving lane and Overtaking lane, developing wrongly on Indian roads and these wrong habits only seem to be the main reason of road accidents (man made disaster). Here are some examples.

(A) Under the provision of Rule 103 (2) of CMVR 1989, four wheelers are equipped with such a device that when the vehicle is in an immobilized condition all the direction indicators flash together giving hazard warning to other road users. Uneducated drivers do not know the actual purpose of this device so they found out the other use by switching on these lights while overtaking. Even after overtaking they take the vehicle in the proper lane without flashing side indicator because at that time all indicators are flashing. This is the abuse of important safety device. Other road users are also confused to see such scenario.

(B) There are varieties of markings painted on road. Majority of drivers do not know the meaning of such markings and unwarranted situation takes place resulting in self accident or accident with other vehicles.

(C) Rule 13 (e) of Rules of Road Regulations 1989 prescribes the method to be observed while driver of a vehicle wishes to allow the driver of the vehicle behind him to overtake. The method is manual. The driver intending to be overtaken has to extend his arm and hand out side the vehicle and to swing backward and forward in a semi circular motion. Some times such manually given signals prove dangerous for the vehicle coming behind if the driver of the front vehicle mischievously gives signal knowingly that it is not safe for the vehicle behind him. By experience it is known that generally such type of accidents happen with police vehicles. Drivers have prejudice for police people so on highway if the driver happens to see any police vehicle in his rear view mirror he grabs opportunity and gives indication for overtaking at a very dangerous time.

(D) As stated above Rule 13 (e) of Rules of road regulations prescribes manual method of giving signal by right arm and hand in case of overtaking, but now a day one innovative idea of flashing right side indicator is adopted for giving indication to the following vehicle to overtake. But this is very dangerous because flashing of Right side indicator means the driver of the vehicle intends to turn to right and if the driver of the following vehicle takes it as a signal for over taking then accident is sure to happen. So there should be only one meaning for the flashing of side indicator

and side indicator should not be used for any other purpose except showing intention to turn right or left.

(E) In recent years articulated trailers of higher and higher capacity are extensively used for transportation of goods across the country. These are special vehicle in terms of total length, width and turning circle. No provision is made in CMVR regarding wide angle turn of such vehicles.

Speed of a vehicle decreases on taking off foot from accelerator pedal and a vehicle can be almost stopped by changing to lower gears. But this sort of activities is not understood by the driver coming behind. There is no compulsory provision in M V Act 1988 that the driver slowing down his vehicle engaging in lower gear should also make use of brake lights to give signal to the following vehicle about his activity. Due to such unknown reasons avoidable mishap takes place.

Road Accidents Mitigation Program

Ranjan Mishra and Vivek Srivastava
Advent Institute of technology, Udaipur
(ranjanmishrakni@gmail.com), (vivek.rader@gmail.com)

'Aetiology' means a branch of science dedicated to finding the causes of something. European researchers have been busy updating the aetiology of road accidents and studying which technologies can make our roads safer for everyone.

According to Times of India dated 17 August India has got the maximum number of casualties in road accidents. The reasons for these accidents can be categorized into two parts

1. Technical reasons.
2. Non technical reasons.

The technical reasons comprises of lack of law and order in the nation. Every person who is involved in an accident is to be charged under section 279, 337 and 338 of the Indian penal code and the person if found guilty in this regard, is fined by the court a maximum amount of 2500 rupees. It is to be noted is that the Indian penal code was enacted in the year 1860 and the fine above mentioned is prescribed in that year and has not at all been modified till date. Another reason is that almost all the vehicles are insured and the driver is aware that he is not at all liable for any compensation against the injured. It can be compensated by levying a portion of the den on the part of the driver and the owner by the courts strictly

Importantly accidents do not just happen; they are caused and lies in the category of non technical reasons. Broadly if we try to analyze these causes and according to the survey conducted by CIRT (Central Institute of Road Transport), driver is the responsible factor in 75% of cases.

In our paper we will be suggesting the remedies for mitigating the road accidents whether it be technical or non technical.

Issues in The Motor Vehicles Act Related To Road Safety -Legislative Approach To Improve Road Disaster Management

Prakash Jadhav
Faculty, Central Road Training Institute, Pune
prakashj@cirtindia.com

Road safety is all about reducing the incidence of road crashes and creating an ambience of assurance of “safety always for all roads”. The universally acknowledged factors contributing to road crashes are driver errors, defective vehicles, defective designing of roads, poor climatic conditions and road user behaviour. None of the above factors are directly related to each other. Yet it could be firmly stated that drivers possessing sound driving skills and healthy attitude towards all road users and driving mechanically fit vehicles, will strive to avoid the accident-situations leading to a high degree of road safety.

Good drivers and technically sound vehicles are a direct outcome of the regulations of the land. The Motor Vehicles Act and the rules made thereunder have been legislated basically for eliminating all possible road hazards and improving the road safety scenario. The regulatory aspects of the law ensure that only skilled drivers could be added to the existing drivers’ population and only fit and low-emission vehicles stay on roads. The contravention of regulatory provisions is detected by the enforcement machinery of the M.V. Department and the traffic police. But as a matter of fact, this exercise only generates tidy amounts of revenue. The paucity of human resources, lack of proper infrastructure and lack of technologically advanced equipment with the regulatory and enforcement agencies always dominates the road transport scenario and the road crashes go unabated and in fact are still on the rise.

One of the core issues related to this poor scenario of road safety is the grey areas within the legislative framework. Majority of the provisions in the M.V. Act and the Central Motor Vehicles Rules are crystal clear, but in certain cases, there is a scope for interpretation of the law in more than one way. Here, the statement of objects and reasons (SOR) mentioned in the preamble of the Act come into play. The SOR certainly help the transport authorities to steer through the jungle of misinterpretation. In spite of this arrangement, it has been observed at the field level, that the legal provisions are often wrongly interpreted, resulting into sloppy regulatory practices. The tragic part of this scenario is that, the interpretation of law varies not only from state to state in India, it varies from office to office within any one single state.

Thus there is a need to make certain provisions in the Motor Vehicles Act, 1988 and the Central Motor Vehicles Rules, 1989 clearer. It is also felt it is imperative for laying down improved guidelines in the law and leave less scope for the field officers to continue lousy practices, resulting into stricter regime for driver licensing and vehicle certification and ultimately improving the road safety scenario.

Air Disaster: Causes and Remedies

Mukesh Mohan Pandey, Vikramjit Nath & Nitin Kumar Pant
mgmtsolutions@yahoo.com

Disaster is sudden or rapidly developing events that disrupt the prevailing order of life producing danger, injury, illness, death and loss of property. It has got some element of suddenness producing catastrophic results giving very-meager time to respond. When it comes to aviation disaster this response time is comparatively very less. However, airline flying is 10 times safer than road transport. According to OAG Back aviation solutions, the odds of being killed on a single airline flight with top 25 airlines are 1 in 10.46 mn.

Thanks to the strict norms that are laid down by regulatory bodies like International Air Transport Association (IATA), International Civil Aviation Organization (ICAO), Federal Aviation Authority (FAA), National Transport Safety Board (NTSB), National/ Regional Regulatory Bodies.

Besides that whenever an air disaster occurs, the survival rate of passenger on the aircraft is very less. In the decade of 2000s it is mere 24%. Thus in case of air accident maximum proportionate fatalities occur making it the most vulnerable of all man made disaster.

Generally air disaster are caused by human action negligence, error or involving the failure of the system and come in the category of technological disasters. According to air accident statistics 53% of air accidents are caused due to pilot error, 21% due to maintenance error, 11% due to bad weather, 7% due to other human error (ATC), 7% due to sabotage and 1% due to other causes. Hence we find air disaster is the outcome mostly of human error and this is the consequence of inappropriate managed risk. However post 9/11 has given a new face of air disaster that is it can also be a sociological disaster.

In this paper we have discussed the extent of vulnerability in air disaster, primal role being played by regulatory bodies to ensure air safety. Furthermore various air disasters causes (both technological and sociological) are discussed in-depth with peculiar cases. Beside this an attempt to provide remedial has also been made in order to bring down the air accident rates and hence ensure that air transport is one of the safest means of transport.

Vehicle Condition Reporting System (VCRS)

Sudhanshu Dwivedi, Prateek Jain
prateek.daiict@gmail.com; sudhanshu_dwivedi@daiict.ac.in

Pollution has been a major problem world over. One of the major sources of pollution is through inefficient utilization of fuel by vehicles. Currently there is no reliable method to keep such vehicles in check. We propose to build a system which tracks these vehicles and helps the traffic police to take strict and timely action. Our system will regularly calculate the emission content of each vehicle and if it exceeds the safe limits it immediately reports to the Traffic police and further action will be taken automatically. Calculation and the analysis of emission content would be done by the processor programmed for this purpose and reporting of actions would be taken using a well established networking setup.

In our system we place a sensor which senses the emission content of a vehicle from its exhaust pipe. The sensor delivers data to a processor which instructs a wireless device to send a signal (containing the vehicle's number) to the nearest Traffic Police Post (TPP), if the emission content breaches the safe limit. TPP then sends this signal along with its own Identity to the Traffic Police Headquarters (TPH). If the TPH receives five such signals for the same vehicle then TPH sends a signal to the vehicle, in order to deactivate the vehicle's sensor. Then TPH sends an official notice to the vehicle's owner giving him specified time to make his vehicle fall under the safe limits otherwise his car would be taken off the road.

Man Made Disasters - Road Accidents

S.Satheesh

Highways Research Station, Chennai

subramaniam_satheesh@yahoo.com

Roads are the choicest mode of transport, which provides the best connectivity, when compared to the other modes. Nevertheless, it is the most opted mode of travel, by all users. Better road connectivity of a Country/State, ushers economic development and welfare of the community. The developed economy and increased buying capacity of the common public has resulted in the increased Automobile population and with a better quality road-network, there is an exponential growth of traffic along (he roads, which in-turn is also the cause for increased Road Accidents.

The East Coast Road, a road along the Coast of Bay of Bengal, starts at Km. 11/6 near Thiruvannamiyur, near Chennai and is dotted with lot of amusement Theme parks, Entertainment Centres etc., and also passes through Mahabalipuram, the major tourist attraction of Tamil Nadu. The heterogeneous category of vehicles and their increased speeding capacity along this road had caused numerous accidents along this stretch, many of which are fatal in nature. The scheme of "Traffic Accident Prevention Study in East Coast Road" analysed the cause of accidents occurring in East Coast Road. The road is infamous for fatal accident occurrences.

The study aimed at identifying Black-Spots, (location where accidents frequently take place, conduct relevant speed and volume studies, a closer examination of the site conditions, prioritize the black spots and conduct a comprehensive Computer aided accident analysis. The analysis was followed by suggestion of suitable remedial measures.

Based on the Accident Data, data were collected at six locations along the study stretch. On a G.I.S. based comprehensive analysis, 36 accident-prone locations were identified and site-specific recommendations were suggested for improving the locations. The Stretch of the road is under observation period, at the end of which the suggestions would be weighed and evaluated.

Walking On Delhi Roads Is A Pedestrian Nightmare

Mr. L.K.Jain,
Industrial consultant
lk_jain@hotmail.com

At national level, over 100,000 persons die every year in road transport accidents in India. In addition, about 1.5 million people are hospitalized and approximately 7 million suffer minor injuries. The estimated annual loss to the country is to the tune of Its. 550 Billion annually. This is around 3% of the GDP. Such colossal losses should draw our attention.

Delhi pedestrians form over 50% of the road accident casualties. This condition of national capital is pretty grim when we compare the national average of pedestrian casualties which is 8.5% of road accident victims. Comparing internationally the pedestrian fatalities of Delhi are to the tune of 7.0 per 100,000 population compared to LO pedestrian fatalities per 100,000 population of New York (USA) in 2005; other major international cities are still lower.

As a pedestrian an average Delhite faces several problems. There is practically no space to walk on. The footpaths which are meant for walking have been encroached on by various activities. This encroachment includes shopkeepers, hawkers, vendors, vehicle parking, animals, washing and cooking activities etc.

Though isolated instances of Government putting in a huge effort to save individual lives are seen from time to time, however a concerted effort to do the same on a mass scale are absent.

Paper will suggest possible remedies in current scenario, which involves no financial expenditure and can be implemented without delay. This will facilitate Pedestrians in providing normal walking conditions. The system will work to prevent pedestrian casualties and injuries significantly.

Innovative methodology for demarcating high road accident risk prone stretches in the mountainous terrain

Piyosh Rauteia and Swarn Shikher Pant
Disaster Mitigation & Management Centre, Dehradun
piyooshrautela@gmail.com

There is growing global concern over burgeoning road accident induced losses. Terrain conditions in the mountainous regions make roads prone to fatal accidents. Sinuosity (high curvature), gradient and width of [he hill roads are identified as major factors making these roads accident prone mid based upon mutual correlation of these basic road parameters, a methodology is evolved for delineating high accident risk prone stretches of mountain roads. This methodology is used for demarcating differential probability of accident risk along the National Highway and Main District Road network of Uttarkashi district in Uttarakhand (India) and the results are correlated with real road accident database. Application of the proposed methodology thus exhibits potential for reducing the frequency of road accidents by adopting suitable site-specific measures at high accident risk prone road stretches. These could be in the form of bringing forth awareness and by initiating suitable changes in the techno-legal regime for controlling vehicular traffic as also initiating structural measure* and providing for quick post-accident search, rescue and relief facilities. These would reduce frequency of road accidents and provide quick relief to accident victims and at the same time reduce economic and human toll of road accident.

'Anti-Collision Device (ACD) Network' - A Train Collision Prevention System (TCPS)

Ajaykumar A. Bhatt
Konkan Railway Corporation Ltd.
edsnt@konkanrailway.com

Safety violations due to 'human errors or limitations' and 'equipment failures' occasionally result in Train collisions. Patented by Konkan Railway Corporation, 'Anti-Collision Device Network' (also called 'Raksha Kavach', meaning 'A Train Safety Shield') is an on-board train collision prevention system.

Designed as a 'non-signal' system, it provides 'non-vital' 'safety enhancement'¹ layer over the existing safety systems of train operations. 'ACD Network' therefore fills up 'safety gaps' left out due to limitations of existing 'signal' based train protection systems.

'ACD Network'¹ consists of mobile ACDs (on Locomotives and Guard's Brake Vans) and track-side ACDs (at Stations, Level Crossings, Loco sheds, Sensors based and Repeaters, en-route). Mobile ACDs take inputs from GPS satellite system for position updates and network with track-side ACDs located within a radius of Three Kms (using UHF radio modems); to activate brake(s) with the help of on-board Loco ACD(s) through their Automatic Braking Units (ABUs), whenever a collision-like situation is 'perceived'¹. 'ACD Network' is likely to prevent 'head-on' and 'rear-end' collisions in mid-sections, collisions at 'high speed' in 'station area'¹, 'side collisions' with derailed vehicles obstructing adjacent line, collisions due to 'train parting / jumbling' and collisions with 'road vehicles' at level crossing through Train Approach¹ warning and detection of 'Gate Open'¹. Loco ACDs also give 'Station Approach'¹ warning to drivers. Moreover, using Manual 'SOS' buttons on their ACDs, Drivers, Guards and Station Masters can also 'stop' trains when any unusual is detected.

Need & Strategies for Awareness & Preparedness about Emergencies in Carriage of Hazardous Chemicals by Road

Sanjay Sasane
Nasik, Maharashtra
sasanesanjay@yahoo.com

Need of awareness about emergencies in carriage of hazardous chemicals by road & Strategies to prepare people for facing hazardous chemicals transportation emergencies.

The chemical industry is one of the oldest industries in India. This industry plays important role in day to day life of average Indian citizen. This industry contributes major share in economic development of India.

We all are aware of the hazardous nature of manufacturing, storage & transportation of products originating from chemical industry. The Government of India is at par with all developed nations in implementing legislations regarding safety in manufacturing storage & transportations of chemical goods. These legislations are followed devotedly by captions of chemical industries in their premises where chemical goods are manufactured and stored. At consumer retailers' level, laws regarding storage of chemicals are strictly followed e.g L.P.G. cylinder distribution retailers, fuel retailers etc.

The neglected aspect in chemical industries while implementing the stricter laws about safety in chemical industry is transportation of hazardous goods. Training programmes are beings conducted by Central Pollution Control Board and National Safety Council through ICMA, FICCI & CII. These trainings are aimed towards industrial workers.

The major neglected population is where facility of training does not reach in the logistic chain i.e. drivers & line staff as well as handlers of loading & unloading of chemicals.

In case of on-road accidents, general public in the ambience is unwillingly dragged in hazards of transportation of hazardous chemicals. These issues are out of purview and reach for the managements of chemicals industries. The risk involved for general public is too high as they are not at all trained for handling these emergencies.

The paper contains various provisions as laid down in Central Motor Vehicle Rules, 1989 related to carriage of hazardous chemicals covering the driver, vehicle cleaner, chemical consignor, consignee and transporter. During the course of training, discussions on various chemical road accidents underlining removal of lacunae in transportation are carried out. These provisions are equally aimed at safety of general public.

The paper further give details about efforts of Government in identifying the stretches on major higher checking susceptible to major chemical accident.

With the example of Nashik district, this programme gives a general outline about utilizing "District off-side Emergency Disaster Control Action Plan for Chemical Accidents".

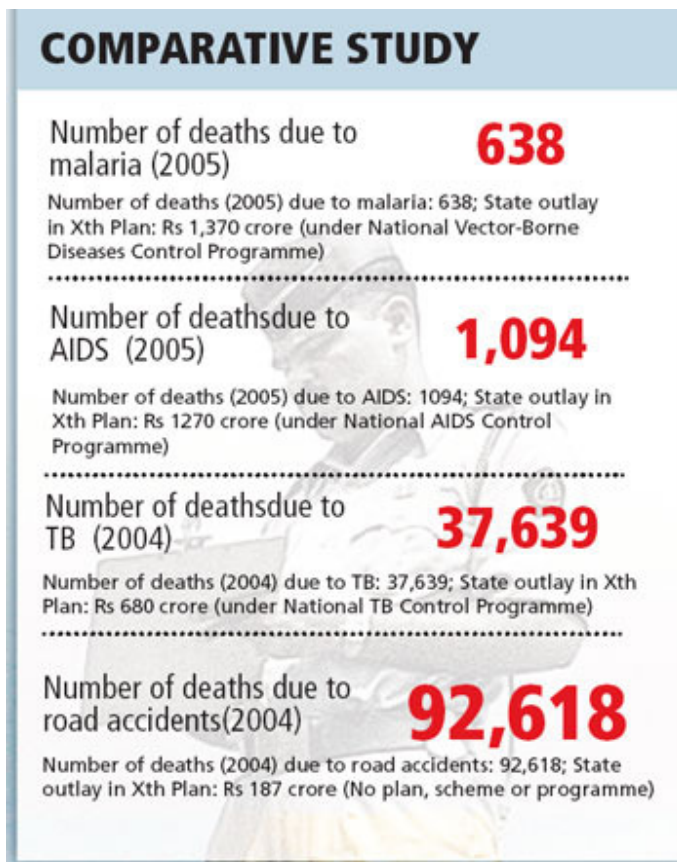
The training to NCC, RSP, NSS students & “gramsabha” will strengthen the efforts by MARG (Mutual Aid Response Group) for spreading the Awareness for Preparedness for Emergencies of Local Level (APELL) and to protect rights and avoid damage to the properties as well as environment by adopting proper response and follow up in case of Emergencies. The need & method of training for resource persons like Fire Brigade, Police authorities, Health authorities in Primary Health Centres is being emphasized.

Training and awareness among the children with words ‘Catch them young’ can be purporated through schools & Colleges located in Chemical Zones and nominated Highway Stretches. Involvement of NGOs including the Rotary & Lions Club can also be clubbed with Mutual Aid Response Group for effective propaganda.

Road Infrastructure and measures for minimizing road accidents

Alok Mishra
Independent Research Scholar, New Delhi
alokmishra25@gmail.com

We all know that total road network is 3.34 million but the road infrastructure is not up to the mark of international level. And India is a middle developed country. We cannot put vast resources in road security.



So as these days we are taking too much about swine flu but as data's show we should do something for safety of passengers. 40% of accidental deaths are caused due to road accidents.

Promotion should be given to public transport as in this format the casualties are low. We see everyone is buying personal vehicles so heavy duty must be imposed to make people reluctant to buy personal vehicles.

A recent high court order states that you cannot buy a motorcycle without buying a helmet.

Compulsory buying of a medical kit while buying a insurance scheme in case of vehicles. Lifetime ban of driving license if found caught in drunken driving.

A toll free number to give suggestions/complaints information of accidents of vehicles should be introduced at all India level.

URBAN ROAD SAFETY PERSPECTIVES, ISSUES AND STRATEGIES – INDIAN SCENARIO

Sanjay Gupta

School of Planning & Architecture, New Delhi

s.gupta@spa.ac.in

Rapid urbanization in developing countries presents tremendous challenges to the transport systems of expanding cities if they are to meet the access and mobility needs of their communities and provide them with a sustainable, safe and healthy environment. To meet this expansion many developing world cities are increasing the capacity of their road networks, but often at the expense of the safety of the vulnerable road users. As a result many people die and are injured unnecessarily in road crashes, with the consequently social, economic and health burdens imposing heavy constraints on sustainable development. Road accidents are serious problem, an important cause of death and injury and a considerable waste of scarce resources. Road safety is an issue of immense human importance with economic and social implications.

The present paper highlights the road accident scenario at state and city level and the issues emerging out of the existing road safety scenario in the country. It discusses various road safety management strategies with a view on reducing the number and severity of road crashes within the context of the development and transport goals of the local authority. These include need for proper recording, collection and handling of data on accidents, Road safety audits and accident and casualty databases, improved legislations , training and education, better transport infrastructure meeting vulnerable road user needs, good governance tools, etc. It also highlights the need for a comprehensive road safety policy which integrates all elements of the proposed urban safety management strategies and further the need to strengthen institutional and financial arrangements for improving road safety in the urban areas of our country.