

Invited by Honble Minister of Surface Transport Shri Kamal Nath for suggestions to control road accidents. Made power point presentation as well as in writing suggestions before the officers of Min. of Road transport under IAS Jt. Secretary shri Saroj Dash in Aug. 2010.

Important suggestions regarding “How to reduce fatalities on Indian roads” for implementation through five year plan

[By Dr SANJAY KULSHRESHTHA]

At the outset I would like to comment “It is not necessary we should look for all new suggestions. It is quite possible that such suggestions or guidelines already exist there instead there is need to reinvent or reevaluate them and implement with more faith and intensity”.

Broadly speaking reduction in fatalities can be achieved: [A] By preventing accidents and [B] By Better post accident management of victims. This is an important fact that out of the total accident victims, 24% can be saved by simple trauma care, 46% can be saved by advanced trauma care and rest 30% can not be saved by any intervention or even by the best medical facility in the world. The reason being, the impact of accident is so severe and death in such cases occurs on the spot immediately or with in few minutes before medical help arrive. Prevention remains the only answer for this group of victims.

Thus we see prevention is much more important and cost effective as compared to post crash management. Next question is how to prevent road accidents? In simple words this can be done by eliminating or controlling the factors or causes responsible for accidents. It is very surprising but true that in 80-90% cases human errors [i.e. mistakes or wrong decisions of drivers or other commuters on the roads] are directly or indirectly responsible for road accidents. Vehicular faults and defective roads & environmental factors are responsible only for 3-4% and 4-5% of total accidents respectively. Thus we can see that a large number of fatalities can be prevented if we concentrate on this single factor of human errors. So it is the attitude of the citizens and the society towards their own safety on the road that needs priority in attention and is the real need of hour. To change attitude of the public we have to target the population at two different levels or groups [1] to target present drivers or commuters and [2] to target our next generation that is going to be behind the wheel i.e. our children.

[A] Important suggestions for immediate implementation [for current five year plan]

1. Road traffic safety as subject in education system.
2. Provide some Study materials on road safety to drivers & commuters.
3. Active involvement of Media.
4. More emphasis on punishment drive at country level.
5. Correction of some automobile factors/faults.

[B] Important suggestions for long term implementation [for next five year plans]

1. Suggestions to improve post accident/crash management.
2. Better mass public transport system both on highways and in cities.
3. Address problems related with truck drivers.
4. Address traffic problems of schools
5. Use Income Tax Dept to decongest roads

[A] Important suggestions for immediate implementation [For current five year plan]

1. Road traffic safety as subject in education system

Our children are tomorrow's drivers. The topic of 'road traffic' covers various technical or engineering issues. It affects the people of the whole country irrespective of age group, social status or the city. Thus it deserves to be included as subject in our education system. Education of the traffic science is like a vaccine against the epidemic called road accidents. Our mental-make up is such that unless we introduce a subject into the educational syllabus, we do not recognize its importance in actuality. Traffic science, in spite of being a century old, has still not found a place in our education system, especially at college level. Now it is better to be late than never. It is the job of experts in the education system to decide how to spread this traffic education into different classes ranging from primary to university levels. Some suggestions are given below:

1. In Preschool: Nursery children may be introduced to the elementary concept of road safety through small stories or rhymes. Don't think it too early to educate small kids. It is a fact that one never forgets the rhymes or stories learnt in the nursery classes. When a three-year-old child can drive a car expertly in his computer games, why can't he understand traffic rules? We should not teach them all traffic rules at this stage, but we can certainly make a start.
2. In Primary School: School curricula should include a section on road safety. Children may also be taught how to walk on and cross roads by giving examples.
3. In Middle and High School: By this age they start riding bicycles or small motorized two wheelers. Now traffic rules and the road signs can be taught in greater detail. Principles of accident prevention, basic life support and First-aid can be incorporated in the school curriculum at higher secondary level.
4. In Universities: Traffic Science has still not been evolved as a subject for study at the university level. I think it deserves to be a fully-fledged subject in engineering. Though there are fewer jobs opportunities at present, I am sure if this subject is introduced at a higher level, certainly those who pursue it as fulltime career will get priority over inexperienced people in this field. A rapid rise in the turn-over that is involved in the road infrastructure and automobiles, raises fair hopes for those who follow it as a career.

2. Provide study materials on road safety to drivers & commuters

We should provide some study materials in the form of small book/booklet, etc on road safety to commuters on roads especially the drivers. All the driver of two and four wheelers [including the bus and truck drivers] should be provided with this literature. It should not be as a dry subject but should be made interesting and with practical knowledge with road safety like causes, tips, some philosophy, some education on post crash management like what to do what not to do.

This can be made available by automobile companies to drivers at the time of purchasing the vehicle [like that of service manual]. Alternatively this can be distributed from RTO office at the time of taking driving licence or by traffic police at the time of issuing some challan or penalty or by motor driving schools. It should be in different languages so that people from all states can be covered. It should be economical BUT not free as many times it has been seen that people do not pay due attention to free literature.

At present there is paucity of such literature in the market. Although there are few books on some related subjects but those are mainly reference book for the persons from these particular fields and not for the common public on the roads. The traffic police frequently distribute some pamphlet while observing some traffic weeks, etc however, these pamphlets, mainly inform about the traffic rules. I believe the people need more information on this subject.

3. Active involvement of Media

Support of media is critical for the success of all government or nongovernmental organizations [NGOs] towards road safety initiatives. It can increase community awareness and understanding about different aspects of road safety, such as causes of accidents, public attitude, role of authorities, etc. So far as the print media is concerned, it has been found that it is doing its job effectively by covering them adequately. Some how, we do not see that kind of coverage of road safety on electronic media. The media, especially the electronic one, should realize that it can play a great role in tackling traffic related problems. So it has to do justice in terms of priority and coverage with road safety. From the electronic media we expect: 1. **A half an hour program on road safety:** Like that of health and fitness programs, yoga, cookery, daily or weekly basis can be of great help to change the attitude of the public. 2. **Active group discussions:** News on accidents should not be confined as a bulletin of score related with number of deaths in accidents, instead it should include from time to time an active group discussions with people related with road safety.

Radio is still a very popular mode of entertainment and news and cover 27% of the Indian population that can be used for similar purposes. Recently FM radio is again getting very popular among city people. A person while driving a vehicle is more susceptible to suggestions regarding the road safety. So an FM radio can play an important role enlightening the public regarding traffic safety.

4. More emphasis on punishment drive at country level

I strongly believe that in future for road safety we should give more emphasis on it. Secondly, this punishment drive should not remain confined to metro cities only but should be implemented at the country level.

Traffic violation or breaking the traffic rules is a social issue or evil i.e. despite education and awareness people commit mistakes. It has been found to be true worldwide that people never follow the road safety measures taught in these campaigns. There is a big difference in having knowledge and actual behaviour on the road. Yes, these campaigns may increase our knowledge, but increased knowledge rarely results in appropriate behavioral changes on the road. On the contrary, when the police start punishment, it gets results much faster. When the police personnel educate the public, no one listens, but when the same policemen are spotted issuing challans to traffic offenders, every-one behaves. What does it show? Secondly, safety on roads is a basic right of other commuters who believe in observing traffic rules. If a person after violating traffic rules is let off easily, it certainly reduces the other people's faith in the law. Is it not possible if these offenders are not prevented from doing the mistake, they may subsequently on one of such mistakes may put also the lives of other innocent people on the roads in danger? If these people are corrected timely, it may stop them from putting innocent peoples' lives in danger as well their own. So education alone is insufficient to change people's attitudes on the roads unless strict penalties are enforced simultaneously.

I must say that traffic policemen take harsh decisions only after giving a sufficient time to the commuters and not from day one. People take undue advantage of this or consider their leniency for signs of weakness or incompetence. What is the harm if someone pays for his bad habits? None but the concerned person has landed himself in this situation. The imposition of fine is fully justified and, in fact, this is also a part of educating the people as some people don't like to be educated free of cost and want to pay for it.

Present situation: At present in our country the role of traffic police is confined mainly in the cities and that too around the crossings. Accidents are occurring on two areas either inside the cities or on the various national and state highways. Further, inside the cities accidents can occur either at crossings or in between the crossings. Thus we see that out of the three potential areas for accidents [1.various highways, 2. at crossings and 3. in between crossings] the role of the traffic police is confined to mainly at the crossings. Fact is that at crossings we can control we can control mainly the problem/error of Ignoring traffic signals or jumping the signals [responsible for 10% of accidents] and for *under-utilization of safety measures like* not wearing seat belts & helmets [Although this is not the cause for accident but not wearing seat belts & helmets certainly increases the severity of the accidents]. Thus we see that at present we are able to check/punish only 10% of human errors. What to do for the other 90% human errors that are being done on other areas?

Suggestion: Need to extend the area of traffic authorities/police: There should be some regular check or patrolling and provision of spot punishments [both on highways as well as inside the cities]. "More importantly this news should get a good media coverage at a national level. So that the people should have a feeling of being caught or fear that *they may be checked any where any time*". The fear of being caught can help traffic move in order. This way we would be able to check following five mistakes by the drivers:

A. Driving against one way: It is very surprising to know that the incidence of head on collisions is more or less the same both on divided and single lane highways [around 20%]. So in India while driving on a four lane or divided highways or city roads, one can not feel relaxed that at least he would not face a head on collision.

B. Erratic parking: Irresponsibly parked vehicles on roads [trucks, tractors, cars, etc] are the cause of accidents in 20-25% of cases. Although two drivers are at fault here [one who wrongly parked and the second who rams into it] the one who parks his vehicle in the wrong place appears to be more at fault. For the erratic parking not only the vehicle owner but the road side dhaba or restaurant should also be punished if found guilty.

Drunken driving on highways is common amongst truck & taxi drivers, [Surveys reveal that more than 75% drivers consume alcohol during driving]

C. Unauthorized or Informal Public Transport System: These are uneducated careless drivers who do not believe in traffic rules without concern for his safety or of passengers in his *khatara* jeep or for other road users. The only thing he is concerned about is the number of to-and-fro trips that he makes. If he makes one more trip even with rash or fast driving, he saves hundred rupees more. A grand achievement for him! The people are packed like animals inside these vehicles and equal number of persons are hanging, standing or sitting over the top of the vehicles. It is popularly believed that the poor condition of the unauthorized vehicles is responsible for accidents on roads, but the fact is that it is the drivers who are to be blamed. That is why it has been included in the section of human errors for accidents.

D. Drunken driving: Though the Law or punishment in India against drunken drivers seems to be adequate, its proper and effective enforcement is lacking in India.

Alcohol is responsible for almost one third of traffic related deaths. In India drunken driving is responsible for about 15% deaths due to road traffic accidents. Considering the present mortality of over 1 Lakh/year in road accidents, 15000 people are being killed every year in drunken driving. This is a very conservative estimate as some other random studies have suggested that among all road accidents in about 30-50% cases the drivers were under the influence of alcohol [Bangalore- 44%, Delhi-33%, Kerala-50%]. However, all these data are in relation to *drivers* only. There is no Indian data to show that besides drivers, how many deaths occur among other road users or fellow passengers. Data available at the international level show that about the equal number of casualties occur among people other than the drunken drivers themselves. Here it is important to note that this above mentioned fact is from developed countries where the majority of people [more than 90%] are inside the vehicle that is considered to be much safer on the road. In the Indian context where the driving conditions are just the opposite, this mortality rate to non-drivers could be much higher.

There is one practical aspects of alcohol intake that needs to be considered by the authorities. Everywhere the limits of alcohol consumption are mentioned in the form of BAC levels. For a lay man or a drinker it does not explain clearly about 'how much amount of a particular drink with a particular alcohol concentration will roughly correspond to legal BAC level. So the law-abiding persons, who want to adhere to this safe limit, should have a rough idea. This should be printed on liquor bottles as statutory warnings. This is a practical problem that calls for the attention of the authorities. There is a simple formula [Widmark formula] that may help the individual to calculate his/her BAC level after consuming the alcohol. Details of this formula is given in my book: Tsunami on roads! Wake up India, page 65.

E. Over speeding: Overspeeding was directly or indirectly caused around 45% deaths in country in the year 2008.[This information was provided by Shri Mahadeo Singh Khandela, Minister of State for Road Transport and Highways in the Lok Sabha on May 04, 2010.]

5. Address some automobile issues:

Ban on Metallic Bars or Stiff Bumpers: Risky to both Driver as well as others on roads. The heavy steel bumpers [also called bull bars] were designed mainly for SUVs in rural areas for protection of vehicles from large animals, etc. Many people prefer to use stiff metallic bumpers in their vehicles much like armour. Yes, this does provide safety BUT only to the vehicle and not to the driver. Vehicles are designed in a way that the front portion crumbles after a collision, and dampens the impact of the crash before it reaches the driver. Had there been metallic bumpers joined to the main axis of the vehicle, the majority of the impact would have been passed on to the driver causing more serious injuries. It is the same difference as a person falling from a height onto a cemented floor or on sand. For the same reason now instead of metallic bumpers [that used to be popular in old cars] all the new cars have nonmetallic bumpers.

For Non-Motorized Vehicles: Bicycles and rickshaws should use both front and rear reflectors and fluorescent colours to enhance their visibility at night. These reflectors should also be mandatory for cattle carts.

Helmets: Usually helmets come in dark colours, but I feel a light color would be more visible during night time. Alternatively, fluorescent colours may be used to increase visibility. Helmets use by cyclists also reduce the probability of injuries and fatalities

Trucks to use under-run guards [metallic sheet around]: As trucks are responsible in 65% of accidents on highways. Manufacturing companies should be asked to use a metallic sheet around the trucks covering the lower open area. These are also called under-run guards that prevent vehicles of smaller height from running under the truck.

Address the issue of 'Burning Car': A new kind of accident that was rare or unknown few years ago. Cars are catching fire suddenly. In most of such situations cars get permanently locked, not giving any chance to occupants to escape, but to be burned alive. Inside a car the space is very small and it is full of plastics and foam taking no time to char the body of its occupants. It is seen in cars of all segment and companies [even in brand new cars], both on petrol/diesel and gas based cars. Till date no report of some official enquiry/research by automobile co, or Govt. is available. My Queries are: 1. Although gas-based vehicles have been found to be equally safe as that of petrol or diesel, however, it is a matter of investigation whether this is true in cases of accidents also? Are the gas-based vehicles more prone to catching fire at the time of an accident? What I believe that petrol is not under pressure and takes time to come out to get collected in significant amount and secondly it remains confined to the area of leak only. While the gas is under pressure so it takes no time to come out and spread over a large sphere. 2. Is this the side-effects of many unnecessary extra features to car? More features mean more electric circuits or wiring .i.e. more chances of short circuiting. Whether these are ordered from standard, reliable companies? Whether these have been tested in hot Indian climate or not?

[B] Important suggestions for long term implementation [for next five year plan]

1. Improve post accident/crash management

I feel that the trauma care at a national level can only be provided through a big organization like the government. Thus there is a need for an independent single agency in Ministry of Health under which all the trauma care medical units of the state and National trauma systems can be brought together. To streamline these services, I feel there is a need for a National Programme for the road accidents victims like that of polio, TB or AIDS. We have world class medical facility for cardiac and other diseases, though this quality care may not be accessible to all. However, trauma care for accident victims is still not available to even those who can afford it on their own. There is a need for an affordable, effective and well-organized trauma care system to receive, stabilize and treat all the victims of accidents.

The three main aspects or pillars of the trauma care are [1] referral or specialized trauma centers for providing advanced care to serious or polytrauma cases [2] Smaller or satellite trauma centers capable of providing care for simple cases [3] an excellent pre-hospital or ambulance service. What would be the best module for trauma care? Although some modules have already

been suggested by the government in the last few years, still I feel there is need for more serious discussions on this subject. A detailed discussion of this planning is beyond the scope of this discussion. However, I would like to mention some relevant points that need greater attention or elaboration.

A. Need to form a separate chain of trauma centers: So far as advanced trauma centers are concerned, I believe a separate chain is essential and this should not be merged with the existing health system. Nothing is wrong if geographically they are located within the premises of the existing government hospital complex. However, it should be totally independent in terms of budget, power, transfer policy etc. I have following reasons in its favour.

[1] Trauma care is an entirely different kind of health care. The team or specialists, the type of work, the requirements regarding equipment and the design of building are entirely different. Trauma care needs not only surgical specialists but also a highly specialized set-up that is quite different from that of present centers that are providing all types of care.

[2] The state-run health services in most parts of the country are on the verge of failure already. I believe if the trauma care is merged with that of the existing medical net works, the chances of success are much less. If you want to start a new industry and if you join a unit already declared sick, I believe there are greater chances that the project will not succeed.

[3] If the defence services, ESI or railways can maintain their separate chain of health care, then why not for trauma? Among the top three killers i.e. cardiac, cancers, and the trauma, we see in many metros or big cities exclusive cardiac or cancer centers are being opened. However, we do not see this trend for trauma centers both in government and corporate sectors.

[4] At present, there are hundreds of health schemes or national health programmes that are being run through the existing health system. In fact, the present district hospitals are the outlet for the implementation of each and every National or State health programme irrespective of the fact whether its infrastructure allows it or not. In such a scenario, proper justice to trauma care will remain doubtful. Even the concerned authorities would easily find excuses if this programme does not yield desired results.

[5] Considering the magnitude of the burden of trauma patients, I feel the hospital capacity would be totally used in catering for them and it would hardly be able to provide any service to non-trauma cases.

[6] Why did the government realize that in the Ministry of Surface Transport, there should be a separate department to deal with highways with independent power and funds? Similar grounds also exist for the need of separate section in Ministry of Health for the trauma care.

1. About the Location of advanced centers: If some new advanced trauma centre is to be started in an area the question comes where it should be located, inside the city or along the highways? As far as location of the advanced trauma centers is concerned [highway vs city centric] their utility would be more cost effective and purposeful if located within the city. The reason is: [1] A significant number of accidents victims come as a result to accidents occurring inside the city. [2] Out of the total trauma cases road accidents constitute only 23-25% while the rest are owing to other kinds of injuries and come mainly from the city and need a similar kind of medical facility. [3] Highways [State and National] constitute only 6% of the total road networks so it will not uniformly cover all the road accident victims. What would we do for other 'district to district' roads that constitute about 14% of the total road network? As far a location within the city is concerned, it should preferably be on the ring road as it can be approached easily from all directions.

Regarding the total number of such advanced centers and the choice the cities for their location, it can be decided according to budget available, population density of the particular region, number of accidents occurring in that area.

2. About Satellite trauma centers: The smaller trauma centers are supposed to deal with simple cases. In this regards, unlike specialized centers, it is quite justified that the hospital that already exists on roadside or hospitals of towns on the way, may be upgraded for this purpose.

3. About mobile services: Today with the advancement in the mobile phones network, it is quickly possible to involve such units. I believe it is this area of mobile health units that needs greater attention both in terms of number and quality of service. The reason is that at present the various small health centers, that are present on the highways between two cities or in the nearby towns, are so poorly equipped for trauma care that you hardly get anything beyond the dressing of the

wounds and that too only for a certain hours of the day [up to 2 p.m.]. Ultimately, these serious cases have to be referred to specialized centers and valuable time is lost in this. We don't feel this scene will change in the near future even if we start taking action right now. In this situation these mobile units are better because they are especially equipped for accident cases. In fact, this well-equipped van with a good team would become a 'small mobile hospital' and instead of taking the patient to such center, it can be said the center itself would reach the patient. Besides this, while providing primary care on the spot and inside the van the victim continues to move towards the specialized hospital, thus minimizing the time lag between the accident and of definitive care. If we consider in terms of budget required, their installation and running cost that too for 24 hours would be much cheaper as compared to upgrading these community centers.

B. Need to reevaluate present status of definitive care in Government hospitals: So far hospitals of Delhi, state capitals and those that are associated with medical colleges or universities, are providing a reasonable good care. However, on the other hand, the district hospitals often lack adequate infrastructure for management of polytrauma in terms of trained staff, supply of consumables and critical care. The poor public health infrastructure means that patients often do not receive appropriate care promptly. This delay compromises the results. Some ground realities/facts in relation to most of the government hospitals can be summarized under following points:

1. A very high mortality rate even after reaching to hospital: *It is true that deaths occurring at the spot or within few minutes, that are largely due to severe impact, are at present not under control even in the developed countries. However, it is very very sad to find that even among those who are reaching alive to the hospitals, a significant number dies during the hospital stay. In developed countries, only one out of 200 seriously injured accident victims dies in hospital while in India one out of every six seriously injured victim dies after reaching the hospital.* Even in metro cities, out of the total deaths, 48-64% victims die after the hospital contact. There is little to imagine for the smaller towns or rural areas. Thus, response time and pre-hospital care are not the only important factors determining good results, the quality of post-accident definitive treatment at the hospital also has a bearing on whether an accident victim survives or not. So even if you shift or transport the accident victim in the best possible way to the hospitals, you cannot relax thinking that now the things would move in order.

2. Available personnel and their skills often do not match the needs of the patients: There are not many dedicated trauma surgeons in India. Most hospitals are capable of dealing with mainly orthopaedic problems, hence only if it is a purely a fracture in limbs, a good survival is expected. In the remainder, where there are multiple injuries, the results are poor. Responsibility is not clearly defined. In the absence of clear responsibility among specialists, clinical decisions are often delayed, putting patients with multi-system injury at a greater risk.

In a majority of district hospitals in the public health system, the casualty medical officer is the only one to respond. This is a striking paradox that the most seriously injured patients are frequently being dealt with by the very junior and inexperienced doctors. The concept of a dedicated trauma team that includes various super specialists to tackle emergencies of different fields is not there at all levels.

3. There is a lack of adequate facilities: It is really impossible in most of the district hospitals to start an operation at short notice. The much-needed investigations like X-ray, ultrasonography, CT scan, blood tests, etc are not available under one roof. If at all some of them are available, it is only up to 2 p.m., while facilities for such tests for all the 24 hours is virtually mandatory for a proper trauma care. Often, willing and competent doctors feel handicapped for want of such facilities. It is also true that whatever equipment or facilities are available in the government hospitals they are not properly used. However, sometimes owing to lack of co-ordination or drills, they are not used properly. We blame unnecessarily the lack of funds, etc.

4. High referral rate: According to studies conducted by WHO Collaborating Centre for Injury Prevention and Safety Promotion, nearly 30 to 40 per cent of the cases in government hospitals are being referred to another one. This could be due to poly trauma requiring super specialists, lack of critical care or lack of some special investigations like CT scan under one roof. This frequently delays the definitive treatment and hence the survival.

C. Practical Problems for Doctors and Hospitals: Following the Supreme Court order in 1989, the Motor Vehicles Act was amended in 1994 to make it mandatory for doctors to render medical aid or treatment without waiting for any procedural formalities), unless the injured person or his guardian, in case he is a minor, desires otherwise. Thus all hospitals in the country must compulsorily provide basic minimum care to accident victims, irrespective of their ability to pay. The court has the best intentions in giving strict instructions to the private hospitals in favour of such victims. However, the court should also look upon its practical aspect that the management of a critically injured person is not confined to dressing or bandaging only, instead it involves a lot many things. It may require a prompt intervention of more than one surgical team requiring use of OT, ICU, investigations, lots of medicines and disposables if we really want to do the best in favour of the victims. Even if the doctors do not charge any fee, there is going to be a significant financial burden to the hospital maintenance. If in such a costly affair where there is uncertainty about the payment or the patient expresses inability to pay later on and coupled with the fact that the incidence of accidents is increasing very fast, it would not be practically possible for every private hospital to help such victims as best as possible. It is quite possible that under pressure of courts, these hospitals may admit these cases on record. However, that sometimes may not be more than a formality as further steps regarding the management may not be that prompt.

At present even in most of the government hospitals, most of the medicines are to be bought by the patient's people themselves in such cases how does it expect that private hospital should arrange it for them? As far as implementation or execution of this law is concerned, even in the most prestigious private hospitals of Delhi that have been given subsidized lands for hospital buildings [thus having moral and legal commitment to serve] are still not giving the subsidized or free treatment to the minimum quota allotted to them. If the government has no control over these real big profit-making hospitals sitting right in the National Capital, how can it expect that the other smaller hospitals lying thousands km away would follow it? Instead, there should be some practical solution to it. There should be arrangements for some buffer funds, insurance policy for such victims at the national level [from government, highways authorities, RTOs, making urgent contact to some NGOs that have shown interest in helping such cases, tracking the relatives of the unidentified immediately with the help of network of police, radio and television, etc. To streamline these services, I feel there is a need for a National Programme for the road accidents victims like that of polio, TB or AIDS.

2. Address problems related with truck drivers

Yes it is true that truck is frequently found to be one of the impacting vehicles in roadside accidents [65%]. I have tried to explore some of relevant points regarding this high incidence of accidents:

1. At present trucks constitute about 4% of the total vehicles. Though apparently their number is much less as compared to other vehicles, considering the fact that they are always on the run as compared to personal vehicles and they run mainly on highways, there are greater chance that big and impacting vehicle is a truck.
2. Yes, their thinking may be different, as they are more concerned with safety of goods inside rather than the safety of public on roads.
3. Most of the trucks are overloaded and proper balance of such vehicle poses a real problem. Thus their drivers avoid taking a swift or acute turn suddenly if they are supposed to do to save someone. For the same reason they do not prefer to take the truck off road in such situations.
4. *Since truck drivers have less chances of being hurt in case of a collision, they have fewer inhibitions in such situations.*
5. Only in 25% cases the truck owner himself drives or accompanies the driver. So unlike drivers of the personal vehicles, in 75% cases there is no one with truck drivers to check their driving habits, especially if there is an element of aggressive behaviour or rage on their part.
6. They frequently drink while driving. Surveys reveal that more than 75% drivers consume alcohol during driving.
7. They are over-worked. For making more profit, transporters frequently force their drivers to work for long hours even when they are exhausted.

8. It has been found that more than 60% drivers have fake driving licences. They are not properly trained and their knowledge regarding traffic rules is very poor.

Some suggestions:

1. According to their driving reports, they should be rewarded or punished by their employers. Out of these two, the punishment has not been found very effective instead a reward or incentive for not having crashed has been found to be more useful.
2. The transport industry should realize that drivers need adequate rest and breaks while driving.
3. They are very much underpaid. The latest surveys have shown that in 80% the monthly salary is between Rs 1500-2000 while in 15% it is between Rs 1000 – 1500. More than 90% are not given any benefit of PF, GF, pension or other necessary facilities. The transport industry should consider their problems seriously.
4. Manufacturing companies should be asked to use a metallic sheet around the trucks covering the lower open area. These are also called under-run guards that prevent vehicles of smaller height from running under the truck.
5. Improve Educational status--the educational status in truck drivers is very low especially in English. Though the national literacy rate is 65.4%, it has been found that only 40-50% among general public can read and that too in their regional language. Commercial drivers carrying freight have to move more frequently to different States in India, having their own regional languages. The fact that we are using either English or one of the regional languages for sign boards makes it difficult for truck drivers to understand road signs.
6. *Alcohol Interlock*: This equipment prevents drivers from starting their vehicles if their BAC level is above the legal limit. Basically, it is a breathalyzer that is fitted in the vehicle and connected to the ignition through an electronic device. It is especially helpful for truck or other heavy vehicle drivers or those of chronic defaulters

3. Better mass public transport system both on highways and in cities

The public transport system is an extremely important measure against road accidents not only inside cities but also on highways. I believe this sector really needs greater attention as it would help the real major victims i.e. vulnerable road users who constitutes 68% of total deaths. A cost effective, safe bus service and other means like metro rail would be extremely helpful for minimizing several traffic-related hazards on roads. If this service is really comfortable with sufficient frequency then more and more people having personal two or four-wheelers would be inclined to use it. Due to increased running cost, traffic congestion, jams and parking problems, people from all classes are desperately looking forward to a good alternative. It needs to be discussed in greater detail.

How Mass Transit Systems or MTS helps: [1] Reduction of accidents: Major potential victims of the accidents [two- wheelers, cyclists, pedestrians] are shifted to a safe metallic box i.e. bus. [2] It will make the traffic smoother by reducing congestion. Studies have shown that on an average the road space occupied by the bus in terms of per passengers is 10 times less than the personal or private vehicles on the road. [3] It helps to check pollution e.g. in Delhi the public transport vehicle, that carries 60% of its commuters, is responsible only for 20% of the total pollution there. [4] Less wastage of automobile fuel will save not only public money but also government's money given as a subsidy on petroleum products.

4. Address traffic problems of schools

Besides morning and evening rush hours, there is a third peak hour in the afternoon that is caused when schools get over. Nowadays there is an increasing tendency among parents to drop their children by their own vehicles. The reason could be either the safety of the child or that the school does not provide transportation. There is a sudden temporary increase in personal vehicles, autos and buses that cause a great chaos on roads. The schools are mushrooming very fast and are being opened in residential areas where narrow roads are prone to traffic congestion. In addition to traffic jam, there are increased chances of accidents as children are very prone to that. A significant number of children die or are injured during their trip to school. No comprehensive data is available as to how many children are killed or are injured on their trip

back from school. Sometimes children are packed in cycle rickshaws, auto-rickshaw and vans worse than animals or chicken. This can be reduced by:

1. Keeping a closure time difference among the schools belonging to one particular area [not necessarily of the whole city]. In spite of the fact that this congestion can be reduced to some extent by keeping a difference of 15-20 minutes in school timing, school authorities quite often fail to have an understanding for this, may be because of ego in choosing the time. Sometimes they listen only when compelled by district authorities.
2. Schools should have some parking space to accommodate vehicles at peak hours.
3. School buses are much safer for these. Adequate safe bus service will also reduce the traffic burden. Regular maintenance of school buses is also necessary.
4. Making a pool of personal vehicles like that for offices.
5. Admissions in schools may be restricted to areas of residences of children.
6. Some laws have to be made to fix the maximum number of children in an auto or van, otherwise these auto-drivers will continue to make new attachments or modification to accommodate more and more children in them. They put the lives of children to risk. Every time, if any accident takes place by such an auto, we make a big hue and cry for it. However, we should also consider the other aspects of this problem. The most important well-wishers of kids in the world are the parents of kids themselves. Is it really possible that the parents of such children are unaware of how their kids are being carried to schools since every day they come to see them off and receive them? In my view most of them know this fact and probably due to economic factor they find themselves helpless to intervene. If they ask the auto driver to reduce the number of the kids he is carrying by half, he would then ask for double the fare for their kids. The authorities should make a law regarding this and ensure its proper implementation. The school authorities should also help in this regard.

5. Use Income Tax Dept to decongest roads

You may be surprised how tax and traffic decongestion are related. Income-tax can play a great role in decongesting the traffic. But at present it is not playing its role as effectively as expected. It is quite possible that a person may be having many cars in his own name or by proxy, but may not be a tax-payer or a pan card holder. People go to showrooms and make cash-down payments of several lakhs to purchase vehicles. Targeting the people of this class who are having many cars in their houses just for luxury without a genuine need and probably through the income earned without paying tax is extremely necessary. Every year 15,51,880 cars are sold in India. I want to know from what percentage of buyers the tax department is really able to make a genuine inquiry to find out whether or not these buyers are income-tax payers. Is the number of tax-payers increasing with that of increase in the number of the cars on Indian roads or with the growth or turnover of the automobile sector? I don't think so as in India only 3 crore people pay income-tax and their number is increasing with every year by 3% only. Considering the present tax limits, most of car owners should fall within the tax net.

In the Income-tax department either there is a shortage of manpower or lack of will. As far as lack of will is concerned, it is very unusual for someone to say no to 'Laxmi'. So I believe the former reason must be the correct one. I would like to emphasize the importance of manpower with an example. As doctor working in an intensive care unit, we use several monitors to get the vital information regarding various body systems of critically ill patients. This information is very well shown on monitors and in addition to it there are alarms for our attention. But all these monitors will be of no use if there is no competent and vigilant doctor who can not only pick up and interpret this information but can also react accordingly to save the life of the patient. Similarly, in Income-tax dept, there is no dearth of information but probably of manpower only. In an era of information technology, effective means are available to get the desired information against any tax evasion. In fact all information is only a few clicks away on their computers, but this vast store of information on the computer is of no use unless of course it is utilized.

Suggestions: Cars should be sold by a company only to those who produce a PAN card, or a copy of tax returns filed. This number should also be mentioned on registration papers. It should be mandatory for the local car Showroom Company or RTO department to send information regularly to the income-tax office. Besides, it should be made compulsory to keep copies of the

last returns filed along with other necessary papers with the vehicles. The Income-tax people like traffic police should make a random checking on roads just to confirm whether copies of the last returns filed is there in the car and also whether the same PAN as mentioned in the original registration paper. Secondly, it should be made compulsory that vehicles be registered only in the city that has been mentioned in tax returns. That will ensure whether owners actually belong professionally to the same city or not. It has been found that people instead of registering in the city from where they have purchased vehicles, they go to other cities either to save road tax or for some other reason. Now with this new rule most of the vehicles would be confined to the same area. Thus the town planner can actually know how many vehicles are running in the city while going for reform in infrastructure for the betterment of the city traffic.

Every law has some flaws. So we have to be prepared for that. [1] Because it is possible after filing a single tax returns in that particular year in which the vehicle was purchased, the person may disappear thereafter. Random checking on the road will ensure that they regularly pay the tax. [2] PAN number should also be mandatory for the person who takes a second-hand vehicle, otherwise he may buy on someone else's behalf and soon after this he would get it transferred in his name. [3] At present those who have income from agriculture are exempted from tax liability. People may misuse this provision. If they purchase personal four-wheelers or SUVs, this itself indicates that they are not poor and should not be considered eligible for exemption.

Dr SANJAY KULSHRESHTHA,
MBBS, MS [general surgery], MCh [pediatric surgery]
Consultant Pediatric Surgeon,

1/171, Delhi gate, Gulab Rai Marg, Agra – 2 [tel 0562 2853710, mb 09897078456]

Author of book: Tsunami on Roads: Wake up India! This book discusses the present situation of traffic related hazards & problems of our country and their management in a very rational and scientific way touched with forthright approach, some philosophy and a tinge of humour.

Email: drsankul2008@gmail.com

<http://www.tsunamionroads.org>

<http://tsunamionroads.org/feedback.html>

President: Society Against Birth Defects in Children

[<http://www.tsunamionroads.org/Society%20Against%20Birth%20Defects.pdf>]