

Capacity Building and Training for Trauma Care in India

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सत्यमेव जयते

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JPN

**Apex
Trauma
Center**



Greetings from AIIMS, New Delhi

JAI PRAKASH NARAIN APEX TRAUMA CENTER AIIMS, New Delhi Estd. 2006



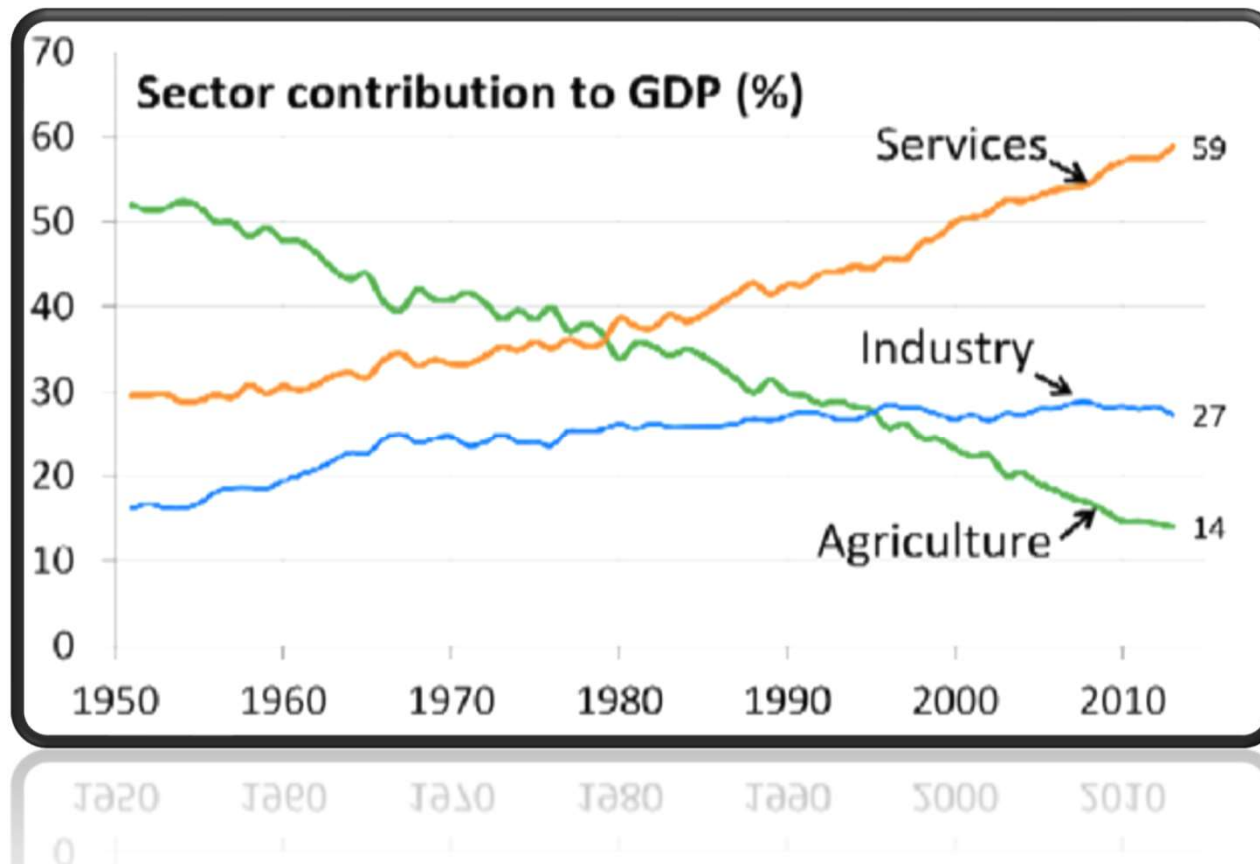
- Level I - State of the art Patient Care
- Trauma Education
- Trauma Research
- Design Systems
- Role Model

Our aim is “to provide state of the art, efficient and compassionate trauma care, from resuscitation to rehabilitation, to all Acutely injured patients and those requiring its specialized services. Develop patterns of teaching, training, research and preventive strategies related to injury of highest standard.”

India - The Growth Story

Increase in Overall Infrastructure

From Agriculture to Industrial growth



Rapid Urbanization

6 cities > 10 million

4 cities with > 5 million

53 Cities > 1 million

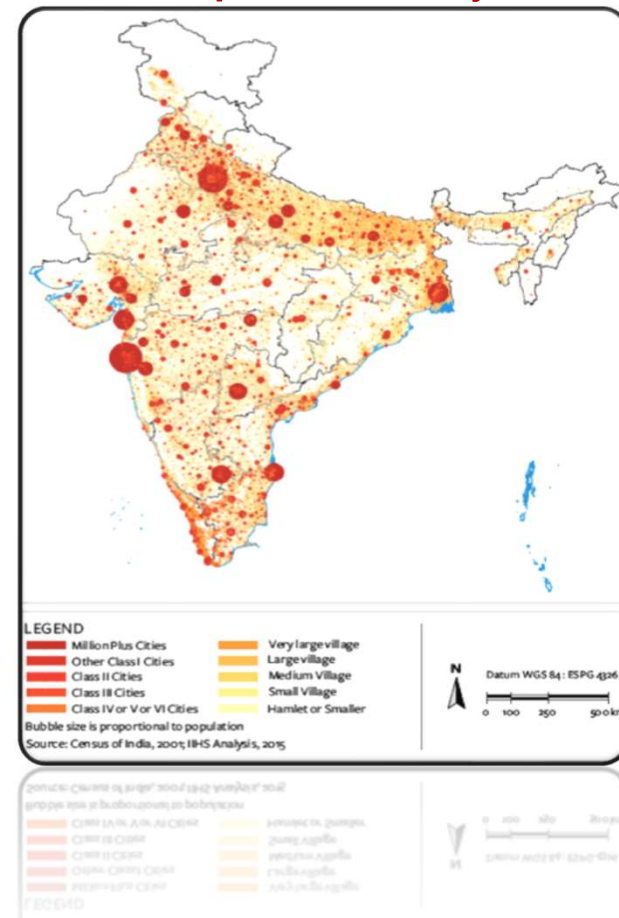
34% Urban Population

Increase in construction activity

Migration to bigger cities for job opportunities

Census of India 2011.

Population Density



Economic Growth over the years

India is a developing mixed economy

- Private with Public enterprise

7th Largest economy by nominal GDP and the 3rd largest by Purchasing Power Parity

- Nominal GDP – \$ 2.716 Trillion (2018)
- PPP – \$ 10.505 Trillion (2018)

World's fastest growing major economy

Achieved 6-7% average GDP growth annually

Long-term growth perspective is positive

- Young population, English proficiency, low dependency ratio, healthy savings, high investment rates, and increasing integration into the global economy.



**Despite this 24% are Poor
12.4% live below poverty line
55% Middle Class**

Source: NITI Aayog

Exponential growth in Road Network

Second largest road network in the world

5,903,293 kilometres (3,668,136 mi)
(31 January 2019)

Road Density 1.70 km /Sq Km

- Japan (0.91)
- United States (0.989888)
- (0.46), Brazil (0.18)

4.63 km of roads per 1000 people.

Qualitatively India's roads are a mix

- modern highways
- narrow, unpaved roads, and are

Investment in national highways

- ₹14,095.87 crore (US\$2.0 billion) in 2005-06 to ₹98,988.06 crore (US\$14 billion) in 2015-16



Growth of Road Users

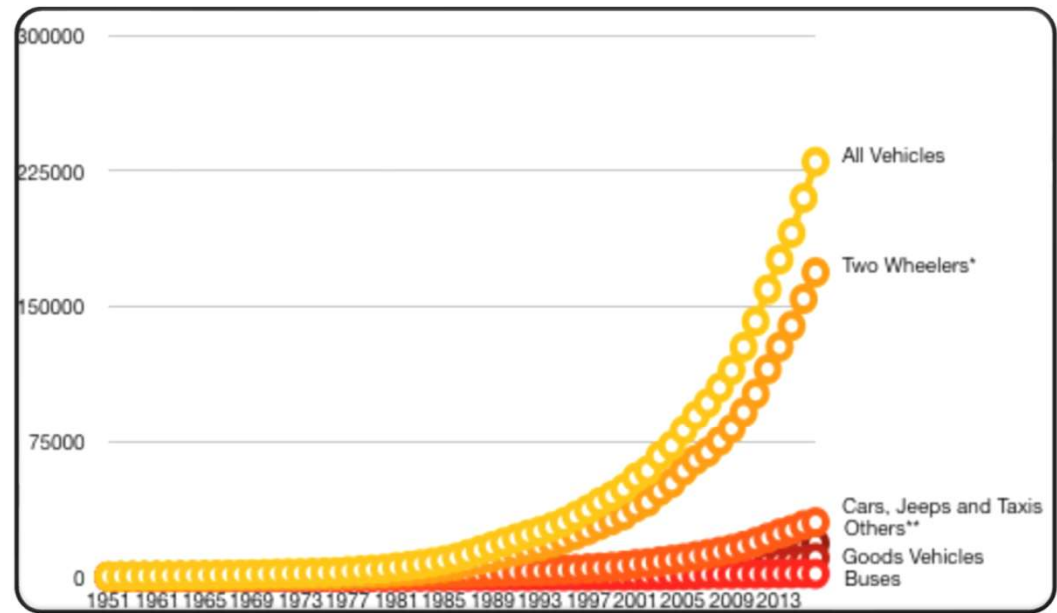
Increasing Aspirations of urban population

Fast Life – Need for personal Vehicles

Slow growth of urban public transport systems

More Increase in Motorized 2 wheeler population

Increase in Registered Vehicles





Multiple road users on highways and roads (92)

Disaster on Indian Roads





11 students killed in J&K bus accident

HT Correspondents

SRINAGAR/JAMMU: At least 11 students of a private computer training institute were killed when the minibus they were travelling in fell into a gorge at Peer Ki Gali in Jammu and Kashmir's Shopian district on Thursday. Officials said the vehicle was carrying students for a picnic from Poonch to Dhojijan.



• The mangled minibus that fell into a gorge at Peer Ki Gali in Jammu and Kashmir's Shopian district on Thursday. HT PHOTO

Shopian deputy commissioner Owais Ahmad said the 11 included nine women. "The bodies have been sent to Poonch while those injured have been hospitalised," he said. Ahmad said the vehicle fell into the gorge near a curve, which is wide enough. "The road condition is also good. It appears the driver was over speeding as the vehicle went over a parapet," he said.

One of the survivors managed to jump off the vehicle before it plunged. "The driver was driving normally... As I was near a window, I immediately jumped out of the rolling vehicle. I saw it going deep into the gorge," said Jaboon

Kousar, the survivor from Surankot in Poonch. Kousar, who escaped with minor injuries, is undergoing treatment.

Shopian district hospital medical superintendent GM Bhat said the dead were aged between 22 and 26. He said one of the seven injured was critical. "Most of the injured have the head or spinal cord injuries," he said.

Mohammed Rashid, a Surankot resident, said most of the deceased belonged to Gunthal, Draba, Lasana, Mandilani Lathoon villages. "There is mourning in every house. The families of the deceased are shell shocked over what has happened with them... All the men rushed to Shopian around 3.30 pm when the news about the accident spread.

By this evening, they may have reached Srinagar," he said.

Poonch's senior police superintendent, Ramesh Kumar Angral, said the students were studying at Kashish Computer Institute in Surankote town. "Their families are in a state of shock. Majority of them have rushed to Shopian," he said.

A police officer, who spoke on condition of anonymity, said that prima facie investigations revealed that the vehicle had old worn-out tyres and that it was given fitness certificate last year. "The old tyres were retreaded and the unfit vehicle was moving on a dangerous Mughal Road."

Another resident, who sought anonymity, said there was no check on unfit vehicles plying in the border district. "The drivers bribe traffic cops, who turn blind eye to unfit vehicles. They indulge in overloading."

Jammu and Kashmir governor Satya Pal Malik expressed grief over the loss of lives and announced a compensation of ₹5 lakh each to the next of kin of the deceased.

3 killed, 10 injured in accident on NH-24

DELHI-MEERUT EXPRESSWAY A minibus rammied a water tanker from behind

HT Correspondent

NEW DELHI: Three persons, two of them from a family, were killed and 10 others injured after the minibus they were travelling in rammied a water tanker from behind on NH-24 (Delhi-Meerut Expressway) near East Vinod Nagar late Saturday.

Police the group was headed to Uttarakhand's Nainital on a vacation and the minibus, Tempo Traveller, was allegedly speeding. The tanker driver fled the spot immediately after the accident but was arrested on Saturday afternoon and booked for rash driving and causing death by negligence, the police said.

The three dead persons were



• The impact of the crash was such that the front right portion of the vehicle was mangled. HT PHOTO

7 KILLED IN AGRA ACCIDENT



• At least seven persons were killed and 40 injured after a private bus coming from Bihar rammied into a truck on the Agra-Lucknow expressway around 5am on Friday. The accident took place at milestone 27 in Agra district. "The bus was coming from Bihar," said Pravesh Kumar, station incharge at Fatehabad police station. "The dead include a woman and two children," he added. HT

35 killed as overcrowded bus rolls down gorge in Kishtwar

HT Correspondent
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JAMMU: At least 35 people were killed and 17 others injured when an overloaded minibus skidded off a winding road and fell into a deep gorge in Jammu and Kashmir's mountainous Kishtwar district on Monday.

This is the second major road accident in the state since Thursday when 11 students were killed when their speeding bus fell into a ravine in Shopian district.

Kishtwar's deputy commissioner, Angrez Singh Rana, said that the exact cause of Monday's accident remained a subject of investigation. "The driver's negligence cannot be ruled out," he said.



Locals and rescue workers gather at the site of the bus accident in Kishtwar on Monday. Officials said that the 28-seater bus was carrying 52 passengers.

AFP

Delhi-bound bus falls into drain along e-way, 29 dead

Hemendra Chaturvedi
 hemendra@hindustantimes.com

AGRA: At least 29 people were killed and 25 injured when an Uttar Pradesh State Road Transport Corporation (UPSRTC) bus fell into a drain after breaching a barrier along the Yamuna Expressway near Agra early on Monday as the driver fell asleep and lost control of the vehicle, police said.

The air-conditioned "Janrath" bus, travelling from Lucknow to Delhi's Anand Vihar terminal, had more than 50 passengers on board, police added. The accident occurred at 4.30am in Emadpur, around 200m from Delhi.

State officials said that it appeared the driver dozed off at the wheel and lost control of the bus, which then veered into a drain.

"Twenty-nine people, including the driver, were killed," said NG Ravi Kumar, Agra district magistrate (DM).

Rescue operations started once the information reached us and a crane was pressed into



Officials said that it appeared the driver dozed off at the wheel.

action. The drain is filled with water hyacinth (an aquatic plant) which hampered the search. All 29 bodies have been recovered," Kumar said.

Witnesses said the speed of the bus dragged it along the divider on the bridge above the drain for dozens of feet before the railing gave way, sending the bus 50 feet down into the drain.

"The bus crashed into the divider and dived along it for

about 40 feet. It then slid along the railing for another 20 feet before falling into the drain. Things happened so fast that we could barely grasp what was happening. Locals gathered gradually as it was early hours of the day," said Saudan Singh, an eyewitness who said he was present at the crash site near Chauhan village of Emadpur, around 50m from Agra.

...the accident...
 ...the driver...
 ...the bus...
 ...the gorge...
 ...the investigation...
 ...the deputy commissioner...
 ...the cause of the accident...
 ...the driver's negligence...
 ...the investigation cannot be ruled out...
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 ...the exact cause of Monday's accident...
 ...remained a subject of investigation...
 ...the driver's negligence cannot be ruled out...
 ...he said...

1 killed, 8 injured as cluster bus rams multiple vehicles

HT Correspondent
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NEW DELHI: A 65-year-old woman was killed and eight others injured after the driver of a cluster bus, which was allegedly speeding, lost control of the vehicle and rammed eight vehicles before hitting the road divider and coming to halt on central Delhi's Desh Bandhu Gupta (DBG) Road near Anand Parbat Monday morning.

The vehicles that were hit by the bus included three auto-rickshaws, three motorcycles and two e-rickshaws. The elderly woman, Bhago Devi from Karol



The elderly woman, Bhago Devi from Karol Bagh, was seated in an e-rickshaw that the bus crashed into in Anand Parbat.

SOURCED

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 ...present at the crash site near Chauhan village...
 ...of Emadpur, around 50m from Agra...
 ...SOURCED

Teen crashes Merc into car, kills CRPF man

GREATER KAILASH-1 Driver, son of Noida bizman, studies in London, is in India on vacation; victim was with PM's security wing

HT Correspondent
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NEW DELHI: A Central Reserve Police Force (CRPF) constable, posted in the Prime Minister's security wing, was killed and two of his colleagues were injured after a speeding Mercedes car jumped a signal and rammed their Wagon R car in south Delhi's Greater Kailash 1 area on Thursday night. The incident took place when the three men were returning after shopping at Lajpat Nagar market.

Police said they have arrested a 19-year-old man, Sandhya Garg, son of a Noida based businessman, who was driving the car. Police maintained that Garg

is pursuing an undergraduate commerce course from a college in London and had come to India on vacation.

The constable, who succumbed, was identified as Narendra Khaseek (34), who had left from Alwar in Rajasthan. The two constables who are injured have been identified as Vinod Kumar (36) and Babulal Yadav (36). All of them were posted in CRPF's Special Duty Group (SDG) and were deployed at the Prime Minister Office and residence.

Vinod Kumar, the constable driving the Wagon R car said that the incident took place when they were returning home to Pushp Vihar. "We had all gone shopping to



The incident took place in south Delhi's Greater Kailash 1. The victim was in a Wagon R car with three friends. **SPRUVANSHU/HT**

Lajpat Nagar. The incident took place when we were near Archana crossing. Our traffic light was green. But as our car was cross-

ing the signal, a Mercedes came over this speeding from Sri Fort Road, appeared out of nowhere and crashed into ours. Before we

could brace ourselves, our car had turned turtle. The Mercedes further went on to ram a divider and then crashed into traffic signal before coming to a halt," Kumar said.

He said passersby and locals immediately rushed to help them and called the police. "Miraculously, Yadav and I did not sustain any serious injury but Khaseek was unconscious. We were all rushed to AIIMS Trauma Centre, where Khaseek succumbed to his injuries on Friday morning. The others were given first aid and discharged," said Kumar, who had been working with Khaseek and Yadav for the last six years.

DCP (south) Vijay Kumar said the driver of the Mercedes, Sandhya Garg, was a resident of Model Town and did not try to flee from the spot.

"Garg is pursuing an undergraduate course in commerce from college in London and was

vacationing in India. His father owns a factory in Noida. He was carrying a valid driving license and was not found to be drunk. He was arrested and booked under IPC section 304A for causing death due to negligence. Investigations revealed Garg had jumped a red light and lost control of his vehicle," the DCP said.

Khaseek is survived by parents, wife and two sons — aged five and seven years. Khaseek's brother Dinesh Kumar, who runs a private coaching centre, said that the driver had killed a person but had received bail. "We have lost a family member. My children have lost their father but the accused has been granted bail. This is injustice," he said.

DCP Kumar, however, said that the offence is bailable under law. "We are looking into the case from all the possible angles. We have seized both the vehicles," he said.

HT METRO

5-yr-old boy, his father run over by truck, driver held

HT Correspondent
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NEW DELHI: A five-year-old child and his 45-year-old father were killed after they were hit by an allegedly speeding commercial mini truck in northeast Delhi's Nand Nagri on Saturday morning. The child's mother and his sister had a narrow escape as some locals pulled them back as soon as they saw noticed they were in the path of the vehicle. The driver fled the spot after the accident, but was arrested from Karol Bagh later in the day.



The driver of the mini-truck, Shambhu Kumar, was arrested from Karol Bagh. **SANJEEV**

RAJPAL'S WIFE, RAJMALA, AND THEIR 7-YEAR-OLD DAUGHTER, MANVI, WERE INJURED. THE COUPLE AND THEIR TWO CHILDREN HAD TO REACH LONI TO MEET THEIR PREGNANT DAUGHTER.

also reached and reached Nand Nagri. ITC bus depot from where they had to take a bus to Loni.

HIGHWAY CRASH

Nine students die in Pune accident

Nadeem Inamdar
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PUNE/YAVAT: Nine college students on board a compact SUV, and their driver, were killed when the car collided head-on with a truck on the Pune-Solapur highway early on Saturday, the police said. The accident occurred in the Kadamwakvasti area of Loni Kalbhore village, around 20 kilometres from Pune.

The nine students, aged between 19 and 23, were returning home to Yavat village from a picnic at Raigad Fort when, police said, the car driver lost control, hit a median and jumped on to a no-entry stretch where it collided with the truck coming from the opposite direction at around 1am.

The impact of the crash was so strong that it reduced the car to a mangled wreck and the rescuers had to cut open the car to extricate the bodies. "The faces of the victims were unrecognisable and identification was carried out with the identity documents in



Locals take a closer look at the mangled remains of the car in Pune. **SHANKAR NARAYAN/HT**

their possession," Loni Kalbhore police station in-charge Suraj Bandgar said. An FIR registered after the accident blamed the driver of the SUV for rash and negligent driving.

A man, who was just passing by the accident site, was shocked to see his cousin among the deceased. I felt lifeless and broke down," said Mohammad Ali Ismail Daya, a relative of Noor Mohammed Abbas Daya, one of the nine deceased. **PTI**

75-year-old held for running over two in Navi Mumbai

HT Correspondent

NAVIMUMBAI: Two people including a seven-year old boy were killed and four others injured in an accident on Sunday evening at Kamoth, Navi Mumbai when the driver of a speeding Szoda lost control, rammed into several parked motorcycles and scooters, and ran over pedestrians in a crowded street.

The person behind the wheel, Harbinder Singh Matharoo, 75, a resident of Kamoth, fled the spot and, according to the police, subsequently checked himself into the Intensive Care Unit of a local hospital.

The police added that he was not injured in the incident. Senior police inspector Davidas Sonawane confirmed that Matharoo is under police custody and



• The car driven by the accused involved in the accident. HT PHOTO

that his blood samples have taken to check whether he was drunk at the time of the accident. The deceased are Sarthak Chopade (7) and Vaibhav Gurav (32). The injured are Sadhna Chopade (30) mother of Sarthak Chopade, Shradha Jadhav (31),

Shifa Sarang (16) and Alish Patil (22). Sonawane added that Matharoo lives alone.

"This could be a case of drink driving. We have registered case against the car owner under section 304 A — causing death by negligence," he said.

Kanwariya killed, 2 hurt in Khanna road accident

HT Correspondent

• hiltenschd@hindustantimes.com

LUDHIANA: A Kanwariya was killed, while two others suffered injuries after a speeding mini-truck hit a pickup van near Beeja village at Khanna on the National Highway-1 on Saturday morning. After the incident, fellow Kanwariyas blocked the highway for about an hour and raised slogans against the police. Kanwariyas are Lord Shiva's devotees who go on pilgrimage to fetch water of Ganga river in the month of Shrawan.

Truck driver Dalip Kumar of Haryana has been arrested and a case registered against him.

The deceased has been identified as Mohit alias Bablu, 20, while the injured are Gulzar, 19, and Deepu, 23, all of Kotkapura. Two other Kanwariyas with minor injuries were discharged from hospital after the first aid.

FELLOW KANWARIYAS SAID AFTER HITTING THE PICKUP VAN, THE TRUCK DRAGGED MOHIT FOR AT LEAST 50 METRES AND HE DIED ON THE SPOT

Fellow Kanwariyas said after hitting the pickup van, the truck dragged Mohit for at least 50 metres and he died on the spot. The impact of collision was so strong that the van fell into a roadside pit.

Investigating officer ASI Jagjivan Ram said a probe is being done to know the reason behind the mishap.

Mohit's father Rajesh Kumar said his son died on the birthday of his mother. "My wife talked to Mohit over the phone at 6am Mohit told her that he will reach Kotkapura by the evening and celebrate the birthday," he said

Three killed in separate road accidents in J&K

HT Correspondent

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JAMMU: Two persons were killed when their vehicle got crushed between two trucks in Ramban district on Sunday evening.

The deceased have been identified as Osman, 22, a resident of Batote, and Basharat Ahmed, 25, a Doda resident.

The accident occurred around 5.30pm when a truck, trying to overtake another truck, hit Tata Mobile and pushed it towards the truck coming from the opposite direction on Jammu-Srinagar national highway at Champa Morh in Batote area of Ramban district, police said.

Both the occupants died on the spot when the vehicle got stuck between the trucks.

It took a lot of effort to extract the bodies of deceased from the mangled remains of the vehicle, a police officer said, adding that a crane was used in the operation.

Police have arrested the truck driver and a case has been registered.

In a separate incident, a conductor of a Kashmir-bound truck was crushed to death under the wheels of the vehicle near Karool in Ramban district.

Charanjeet Singh, 46, a resident of Punjab, was repairing the vehicle when the accident

A PUNJAB RESIDENT WAS CRUSHED TO DEATH UNDER THE WHEELS OF A VEHICLE NEAR KAROOL IN RAMBAN DISTRICT

occurred, police said.

INFANT DEAD, 5 TOURISTS HURT IN MCLEODGANJ LANDSLIDE

SHIMLA: An eight-month-old girl was killed whereas five others sustained multiple injuries in a landslide in Himachal Pradesh's Kangra district, the police said Sunday.

The tourists were hit by rocks sliding from the hill when they were going on foot from Bhagsu Nag temple towards Bhagsu Nag waterfall, located about 11 kms from Dharamshala on Saturday.

The deceased infant has been identified as Lovedeep of Haroli in Una district.

The injured include Jagpal, 30, Aachar Singh, 30, Sunita, 23, Preet, 8 and Arnab, 2. All are residents of Haroli.

The injured were initially taken to the Dharamshala Civil Hospital, from where they have been later shifted to Dr Rajendra Prasad Medical College Kangra.

Roads and Road Traffic Injuries in India



India 2021

- Accidents – 480,652
- **Deaths – 1,54,732**
- **Person Injured – 4,81,262**



Every Hour

- Accidents – 55
- Deaths – 17
- Person Injured – 56



With a population of over 1.2 billion, there were **210 million** registered motor vehicles in India at the end of March 2015



At least **17** deaths occurred from road traffic accidents every hour, in 2016



Working age group of 18-60 years account for **83.3%** of the total road accident fatalities



Road traffic injuries caused **65%** more DALYs in 2016 than they did in 1990



Indian economy takes a **3%** hit every year due to road traffic accidents (GDP loss of **USD 58 billion** in terms of value)

Gross Under-reporting of the Fatality Data

The Million Death Study estimated 47%-64% greater RTI fatalities than the NCRB-reported official statistics

Recent studies, using data from the health sector suggest the possibility of higher underreporting by traffic police*

The Global Burden of Disease (GBD) study

- Several national health data systems,
 - Survey of Causes of Death (SCD), Medical Certification of Cause of Death (MCCD), Million Death Study (MDS)
- 253,993 (95%CI: 239,573 - 266,974) deaths in India in 2016**
- 68% greater than the Government of India estimate of 150,785 deaths

* Road Safety in India: Status Report 2016

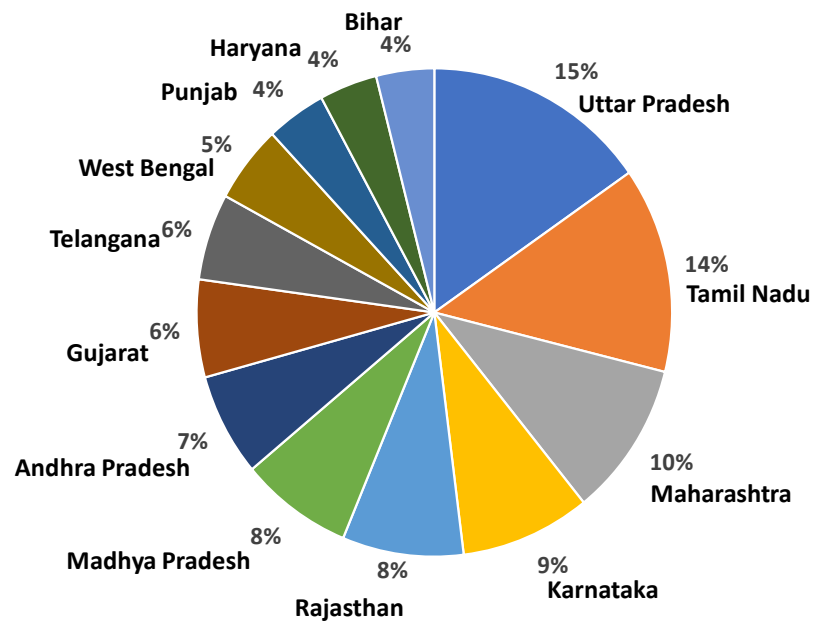
**Institute for Health Metrics and Evaluation (IHME) 2017

Road Traffic Fatalities and Disabilities India

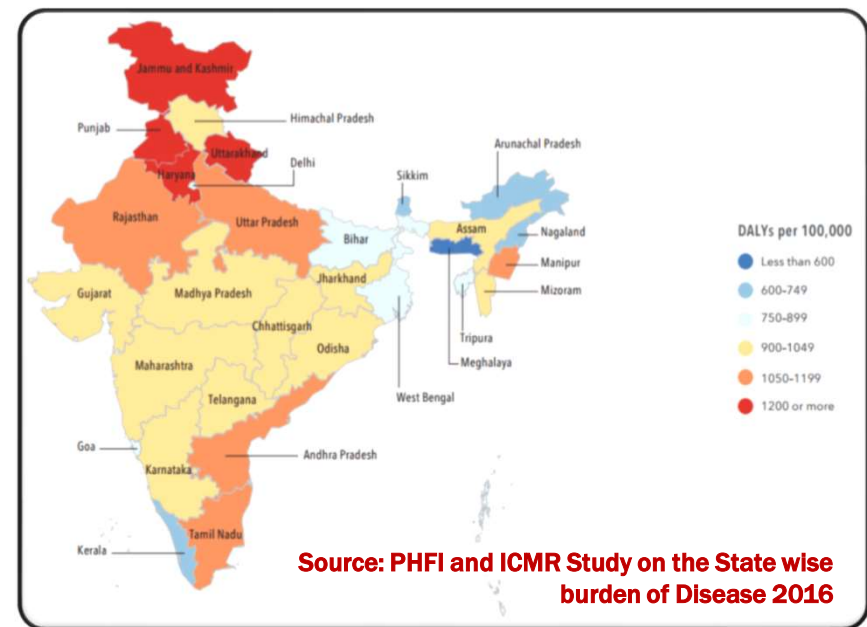
83.7% of total number of Persons Killed in Road Accidents and 86.5

Total number of Road Traffic Accidents were accounted by 13 States

Road Traffic Deaths in Top 13 States in India



DALYs associated with road injuries in India, 2016



Non-Fatal Injuries – The Injury Pyramid

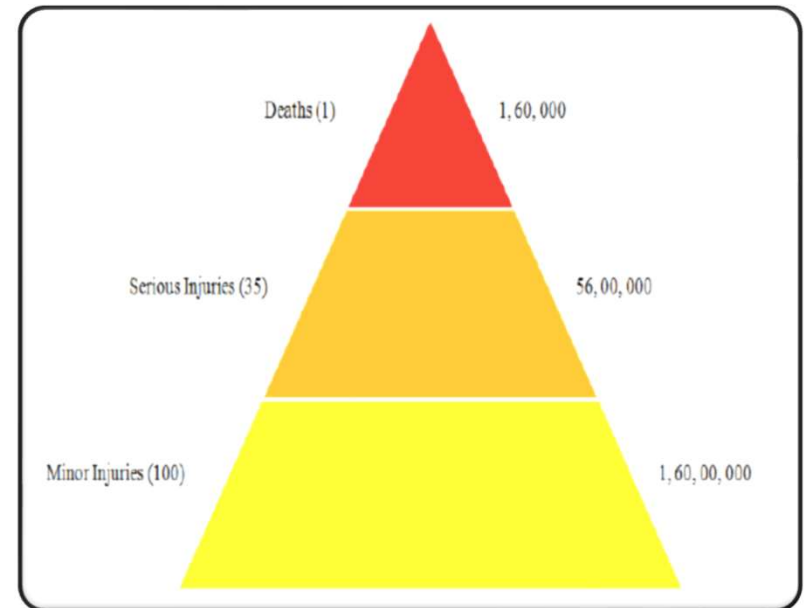
Ratio between critical, serious and minor injuries was 1:29:69 (Varghese and Mohan 1991)

Conservative estimate

- Deaths : injuries requiring Hospitalization : minor injuries
- 1:15:50

2016

- 150,785 : 2,262,000 : 7,539,000
- As non-fatal injury data in India are unreliable police data should not be used for epidemiology of road traffic injuries (Mohan, Tiwari & Bhalla 2016)



Gururaj G. Int. J. Vehicle Safety, Vol. 7, Nos. 3/4, 2014

Multiple Causes of Injuries

Transport related Injuries highest

Injury: Silent Genocide



61%
 of injuries
 occurred on roads, streets
 or highways



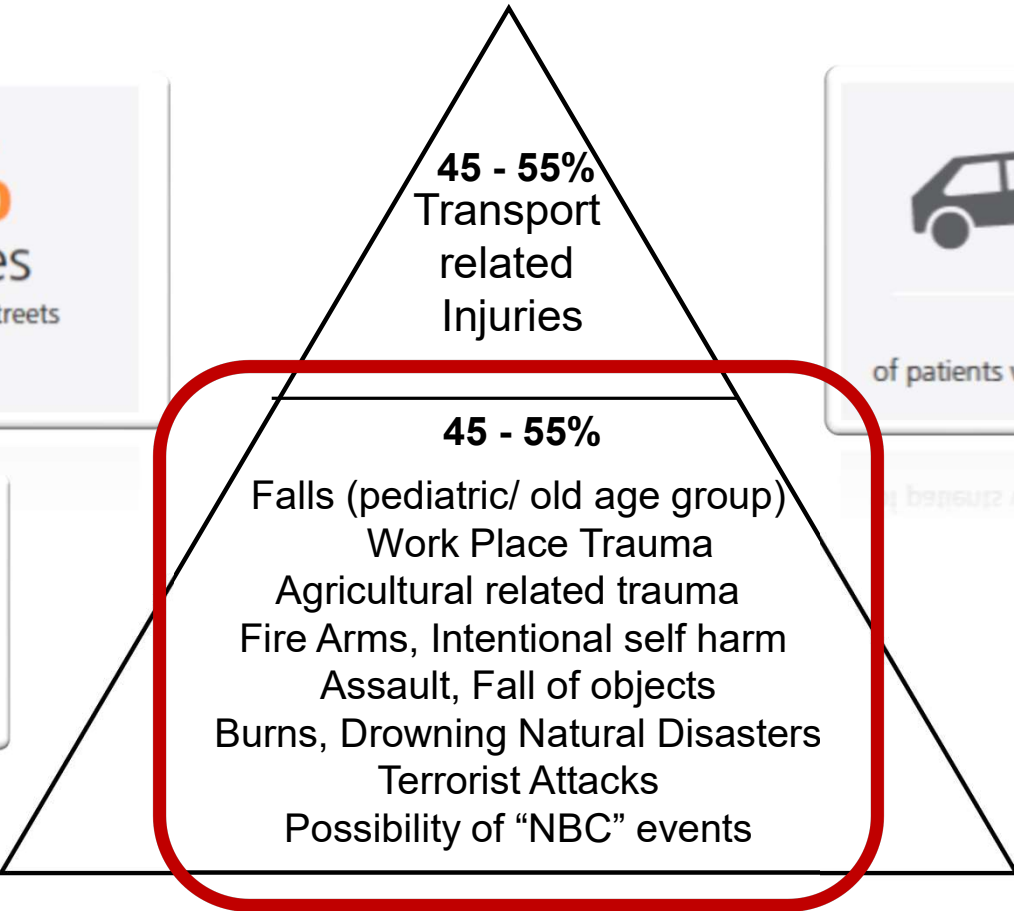
51%
 of patients were injured in road traffic incidents

29%
 of patients were injured
 in falls (low and high)



Falls were more frequent in children (ages 0 – 14)

1 in 4
 presentations were
 motorbike or moped
 related injuries

Trauma Care Systems

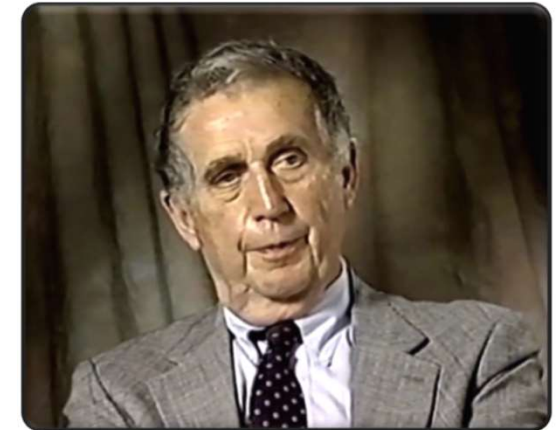
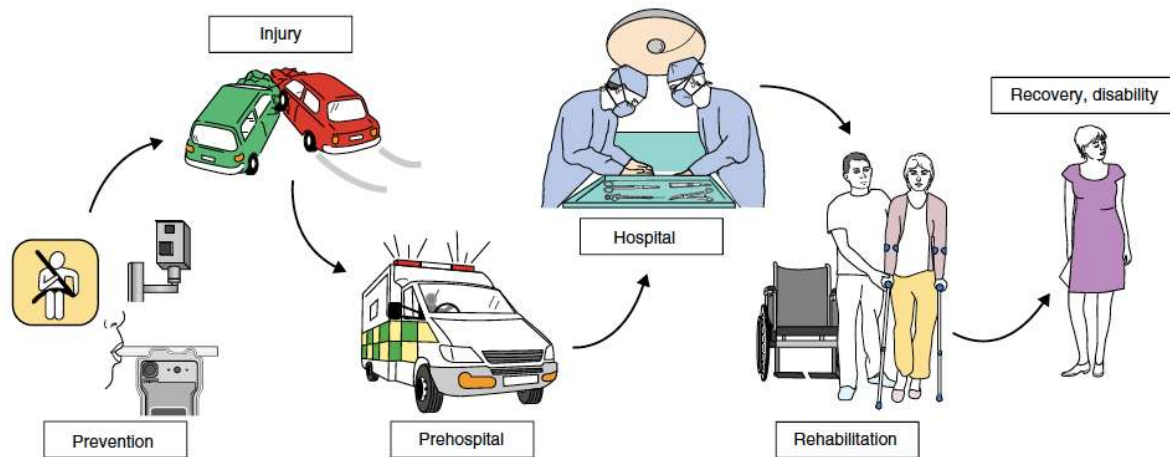
No need to re-invent the wheel

Very high mortality and morbidity

(16 times) for the same Injury severity in India as compared to western data

- **PRIMITIVE OR NON EXISTENT “TRAUMA CARE SYSTEMS”**
- Lack of dedicated Pre-hospital care
- Absence of trained manpower in Pre-hospital; In-hospital Acute trauma care and rehabilitation
- Lack of Trauma related hospital data (registry) and Trauma Quality improvement programs.

‘Getting the right patient to the right place at the right **time** for the right care’



Donald D Trunkey
 June 23, 1937 - May 1, 2019

Source: R. L. Gruen, B. J. Gabbe, H. T. Stelfox and P. A. Cameron, British Journal of Surgery 2012; 99(Suppl 1): 97–104

Trauma Care – Systems Approach

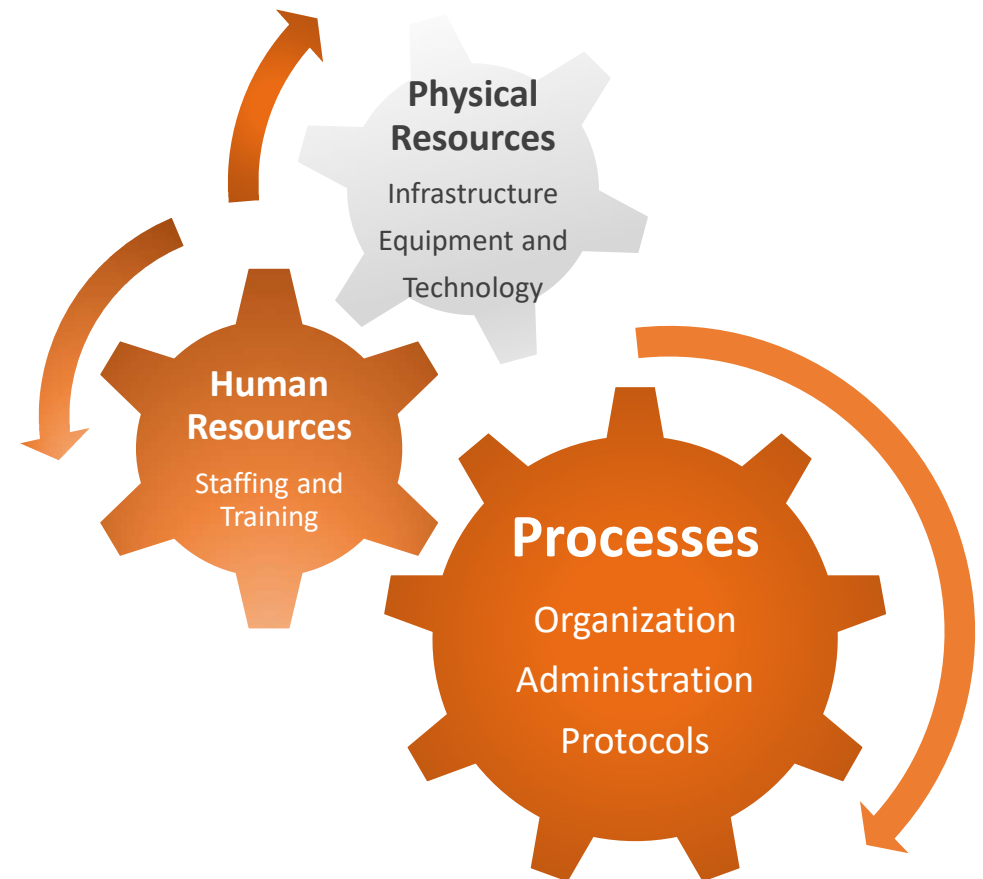
Pre - Hospital Care

In Hospital Care

- Acute Care – ED
- Definitive Care – OR/ICU/Wards

Post Hospital Care

- Rehabilitation



Poorly Organized Pre-hospital care

Public Private partnership at state/local level

- The “108 Services”; Ambulance Access for All (AAA); Foundation and Emergency and Accident Relief Centre (EARC); IIEMS; LIHS; Ambulance Motorbike and Rescue Service (AMARS); Active Network Group of Emergency Life Savers (ANGELS) etc.

Ambulances with Fire Services

Ambulances of Private and Govt. Hospitals

Private Ambulance Services

NGO's/Trusts running Ambulances

St. John's Ambulance Services

Civil Defense Ambulances

Pre-hospital Care – PPP Model

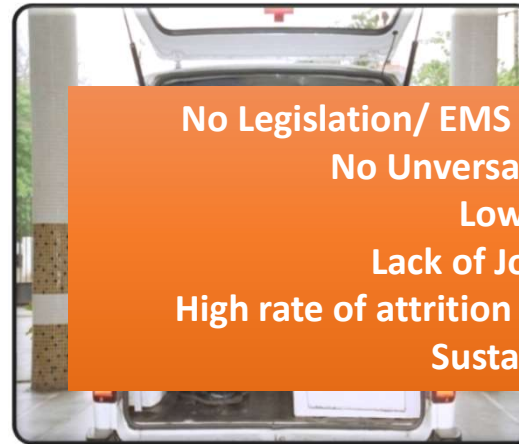
Pre Hospital Care being given by a private agency with a common number “108”

Adopted by 24 States and is in different phases of Commissioning

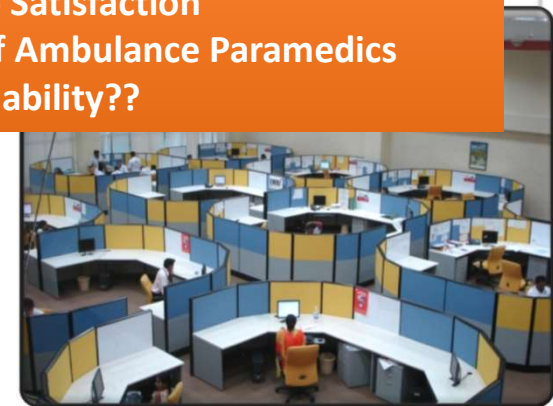
ALS + BLS

Short Term Trained personnel

Communications Center with GPS enabled systems



No Legislation/ EMS Body to govern and Audit
No Universal Access Number
Low Salaries
Lack of Job Satisfaction
High rate of attrition of Ambulance Paramedics
Sustainability??



Pre-Hospital Care – Critical Gaps

No EMS LEGISLATION – EMS Authority (Except one state - Gujarat)

No Universal Emergency Number – Access to Emergency Care

Absent in many states and in most of Rural India

In some states very primitive without equipped ambulances, trained manpower and proper processes & organization

Some states have adopted the Emergency Number 108 for Ambulance/ Police and Fire.

The current systems run on GPS/ GPRS Systems, **backed by regulatory control**

Manpower training and organizational aspects.

In-Hospital Trauma Care – Critical Gaps

Lack of trained doctors and nurses in emergency departments

Direct necessity of Four specialties

- Trauma Surgery
- Emergency Medicine
- Neuro-Surgery
- Trauma Critical/ Intensive Care

Absence of Trauma Surgeons/ trained surgical specialists in trauma

Insufficient numbers of super specialists in various fields of Trauma Care (neurosurgeons, trauma intensive care etc.)

Insufficient numbers of rehabilitation professionals in hospitals

Trauma System Gaps

| | Pre-Hospital Care | | In-Hospital Care | |
|---|-------------------------|-------|----------------------|-------|
| | Rural/ Semi Urban | Urban | Rural/ Semi Urban | Urban |
| Infrastructure | - | + | ± | + |
| Trained and Skilled Manpower | - | ± | - | ± |
| Organization (Processes) | - | - | - | - |
| Trauma Data/ Registries | - | - | - | ± |

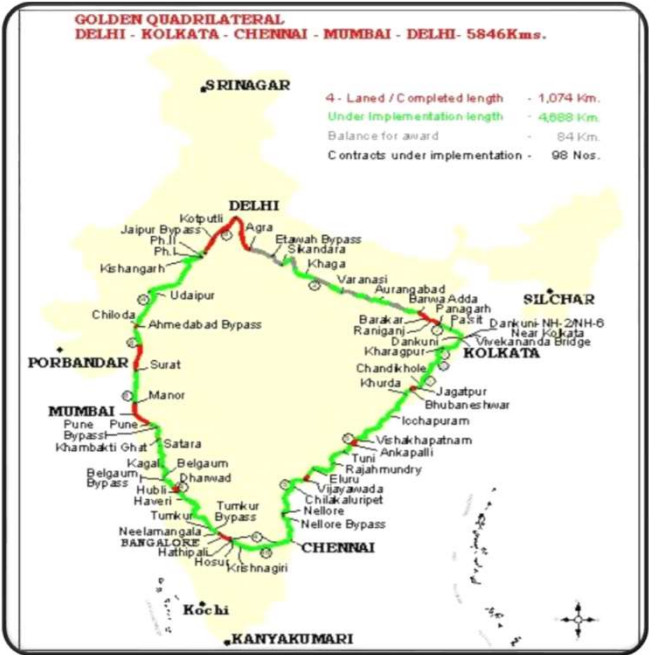
Initiatives of the concerned Ministries of the Govt. of India

The New Motor Vehicle Amendment Act - 2019

| | |
|---|--|
| Offences and penalties | <ul style="list-style-type: none">• Increased penalties for several offences |
| Road Safety Board | <ul style="list-style-type: none">• Provides for a National Road Safety Board (Advisory) |
| Compensation for road accident victims | <ul style="list-style-type: none">• Cashless treatment in Golden Hour• Compensation to Victim/ Family |
| Motor Vehicle Accident Fund | <ul style="list-style-type: none">• Provide compulsory insurance cover to all road users |
| Good Samaritans | <ul style="list-style-type: none">• Not liable for any civil or criminal action in case he provides assistance to Road Accident Victim |
| Provisions for Vehicular Safety | |
| Penalties for Highway and road builders | <ul style="list-style-type: none">• In case of audit breaches |

Provision of Ambulances every 50 Km on National Highways (National Highways Authority of India – NHAI)

The Golden Quadrilateral



The NS-EW Corridor



Ministry of Health & Family Welfare, Govt. of India

Enhancing Trauma Care Infrastructure – Five Year Plans

9th & 10th FYP (1998 – 2008)

- Pilot Project for strengthening emergency facilities along the highways

11th Plan (2008 – 2013)

- Assistance for capacity building for developing trauma care facilities in Govt. hospitals on National Highways. 128 Identified and funded

12th plan (2013 – 2018)

- Capacity building for developing Trauma Care Facilities in Govt. Hospitals on National Highways

Extended till March, 2020

- National Programme for Prevention & Management of Trauma and Burn Injuries

National Ambulance Code – (2018)

Drafted by Central Govt.

Code to define constructional, functional requirements for road ambulances.

Code will be applicable to ambulances across the country

Ambulance Types

- Type A Road Ambulance: Medical First Responder
- Type B Road Ambulance: Patient Transport Vehicles
- Type C Road Ambulance: Basic Life Support Ambulance
- Type D Road Ambulance: Advanced Life Support Ambulance.



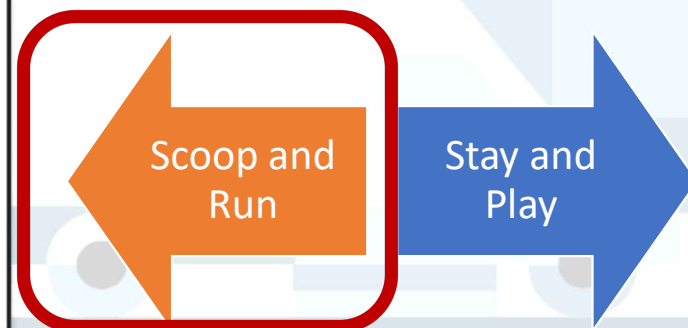
Pre- Hospital Manpower

Recommendations of the National Guidelines on Pre-hospital Care

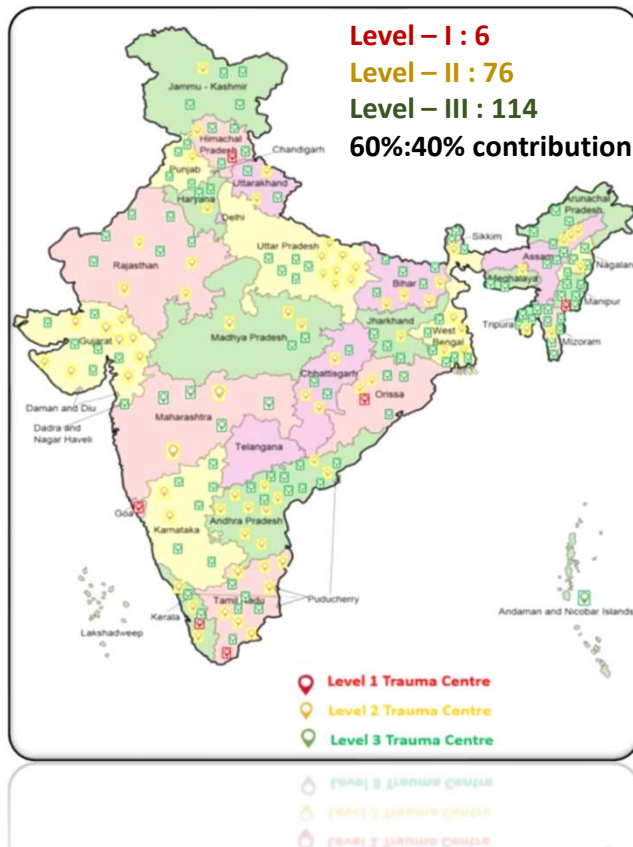
- Who can be Emergency Medical Tech's? (EMT's)
- Training options
 - Employer trains the employee – (Variable 2-4 months)
 - **9 months certification course**
 - Diploma course: 2 yrs
 - Degree course: 3 years
 - Nurses : Degree/ diploma + 6 months bridging course



Prehospital Care Policies



Ministry of Health & Family Welfare Central Govt. helping the state Govt's to upgrade Trauma facilities in State run Hospitals



Capacity Building

Demand “GAP” Supply

Urgent requirement for Trained Medical and
paramedical manpower

Capacity Building: Manpower Training in Trauma

- Short term training courses
 - Bystanders
 - Police personnel
 - EMTs
 - Nurses
 - Doctors
- Long term training program
 - Doctors
 - Nurses

Short Term Training Courses

- Pre-hospital care
 - First Aid (bystanders)
 - PHTLS/ITLS (EMTs)
- In-hospital Trauma care in ER
 - ATLS (Doctors)
 - ATCN (Nurses)

Government Agencies

Public Awareness, Advocacy, Capacity Building and Training, Legislation, First Aid Training, EMS Guidelines



Ministry of Health and Family Welfare
Government of India

सत्यमेव जयते



Ministry of Road transport and Highways
Government of India

सत्यमेव जयते



राष्ट्रीय स्वास्थ्य एवं परिवार कल्याण संस्थान
The National Institute of Health and Family Welfare

आरोग्यम् सुखसम्यदा



World Health Organization



Airport Authority of India

nidm

Resilient India - Disaster free India

National Institute of Disaster Management (NIDM)
(Ministry of Home Affairs, Government of India)



Initiatives of Societies Non-Governmental Agencies

Public Awareness, Advocacy, Capacity Building and Training, Legislation, First Aid Training, EMS Guidelines



The Lifeline Foundation,
Vadodra



Short Term Course: In-hospital Care Advanced Trauma Life Support for Doctors



ATLS - India Inaugural Course

April, 2009



Expansion of ATLS India Program

www.atls.in

27 ATLS sites



The American College of Surgeons
Committee on Trauma

Awards

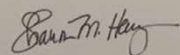
India

With your achievement of 10 years dedicated to ATLS service.

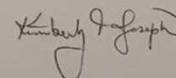
2009 – 2019



*At the Committee on Trauma Annual Meeting
March 22nd, 2019, Chicago, Illinois*



Sharon M. Henry, MD, FACS
International ATLS Chair



Kimberly Joseph, MD, FACS, FCCM
ATLS Committee Chair

Advanced Trauma Care for Nurses



Inaugural ATCN[®] Provider Course

03/2010



Pre-hospital Trauma Life Support course for Paramedics



Inaugural PHTLS course 02/2012



AIIMS Trauma First Responder Course (AIIMS TFR)

Skill Oriented Training

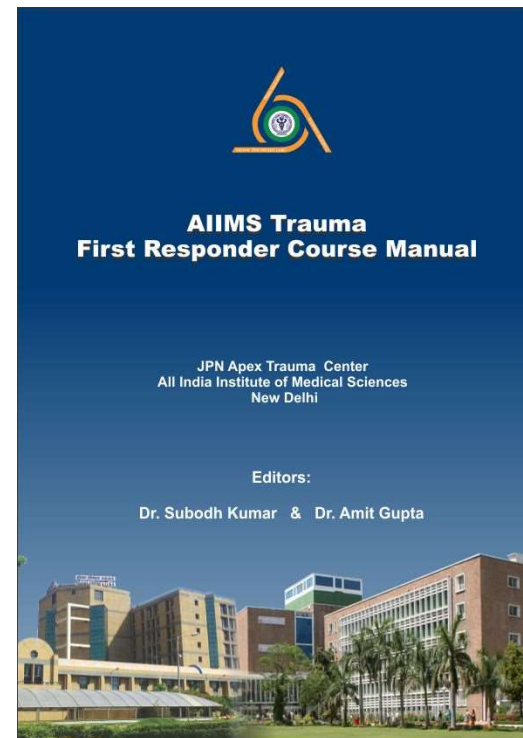
On site – First Aid



Stabilization &
Transportation to
Trauma Care Center



Medical & Surgical
Management at the Trauma
Care Center



**TRAINED ABOUT 1600 PCR PERSONNEL IN 18 MONTHS
2009-2010**



**AIIMS – Trauma First Responder Course
AIIMS – Basic Emergency Care Course
JPN Apex Trauma Center, AIIMS**





GOVERNMENT OF KERALA

Abstract

Health & Family Welfare Department Medical Education Service – Department of Emergency Medicine - Action points for Administrators and Duty Medical Officers to improve the quality of trauma care services in Medical Colleges – approved - Orders issued.

HEALTH AND FAMILY WELFARE (B) DEPARTMENT

G.O(Rt.)No.623/2019/H&FWD.

Dated, Thiruvananthapuram, 09.03.2019.

Read:- Letter No.CA/3/2019/JDME(M) dated 23.01.2019 from the Director of Medical Education.

ORDER

9. BLS training to be mandatorily imparted to all staff who has a presence in the casualty and ACLS and ATLS to all doctors including interns.

Long Term Training (Doctors) Trauma/ Acute Care Surgery/ Emergency Surgery

- ◆ Acute Care Surgery is an evolving specialty with three essential components-
 - ◆ Trauma Surgery
 - ◆ Critical care and
 - ◆ Emergency General Surgery

Trauma/ Acute Care Surgeon/ Emergency Surgeon

Maintains Continuity of Care

- ◆ All Surgical Emergencies
 - ◆ Trauma
 - ◆ Non-trauma
- ◆ Resuscitation in ED- ER procedures
- ◆ Definitive care
- ◆ Rehabilitation
- ◆ Disaster Management

Trauma Prevention,
Trauma Training, ToT
Quality Improvement Programs

Medical Agencies

Responsible to develop curriculum of different courses in India

- ♦ **National Medical Commission (NMC)**
- ♦ **National Board of Examination in Medical Sciences (NBE)**
- ♦ **All India Institute of Medical Sciences (AIIMS)**

PG Training in Trauma & Acute Care Surgery: Current scenario in India

Post M.B.B.S

- ◆ Master of Surgery (M.S.) – Traumatology & Surgery

Post M.S. (Surgery/Traumatology & Surgery)

- ◆ Fellowship of National Board (FNB)- Trauma & Acute Care Surgery
- ◆ Master of Chirurgiae (M.Ch.) - Trauma Surgery & Critical Care

National Medical Commission (NMC)

- ◆ M.S. (Traumatology & Surgery)
 - ◆ Duration: 3 years
 - ◆ Eligibility: M.B.B.S.
 - ◆ Curriculum: Trauma & Non-trauma surgical emergencies



**Dept. of Trauma Surgery
K.G. Medical University
Lucknow**

**First Government
Institution to start in
2021**

M.S. (Traumatology & Surgery)



MAHATMA GANDHI UNIVERSITY
of
MEDICAL SCIENCES & TECHNOLOGY
JAIPUR

MGM INSTITUTE OF HEALTH SCIENCES

Accredited by NAAC with 'A' Grade
(Deemed University u/s 3 of UGC Act, 1956)
Sector-01, Kamothe, Navi Mumbai - 410 209
Tel 022-27432471, 022-27432994, Fax 022 - 27431094
E-mail : registrar@mgmuhs.com ; Website : www.mgmuhs.com

National Board of Examination in Medical Sciences (NBE)

- ◆ FNB- Trauma & Acute Care Surgery
 - ◆ Duration: 2 years
 - ◆ Eligibility: M.S. (Surgery/ Traumatology & Surgery)
 - ◆ Curriculum: Trauma & Non-trauma surgical emergencies

Division of Trauma Surgery & Critical care AIIMS Apex Trauma Center



M.Ch. (Trauma Surgery & Critical Care)

- ◆ Started at AIIMS Delhi: January 2016
 - ◆ Till date 12 batches (36 trainees including 7 from Armed forces)
 - ◆ 06 batches (16 candidates awarded)
 - ◆ 11 joined as Faculty

- ◆ Other AIIMS- Rishikesh, Jodhpur & Patna

Trauma & Emergency Surgery- a promising career



Indian Journal of Surgery (April 2021) 83(Suppl1):S1 –S2
<https://doi.org/10.1007/s12262-021-02940-w>

EDITORIAL



Trauma and Emergency Surgery—a Career with Passion

Subodh Kumar¹ 

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Trauma or its synonym injury is a disease and it can very well be explained by Haddon's matrix [1]. Trauma is responsible for high morbidity and mortality. Worldwide, approximately 1.3 million people are killed in road traffic crashes and 78 million are injured every year [2]. The National Crime Records Bureau (NCRB) reported that 154,732 people died on Indian roads due to trauma in 2019 [3]. Trauma-related mortality affects mainly the young population in the 3rd and 4th decades of life. It is not only loss of life but also loss to a family and society at large and loss of livelihood with financial burden on both family and society. There is an urgent need to reduce morbidity and mortality due to trauma and every effort must be made at individual, institutional, state, and national levels to achieve this goal.

trauma and emergency surgery (TES) [5]. Both ACS and TES are interchangeable. Since trauma surgeons are trained to work during odd hours with limited resources, they can manage general surgical emergencies more efficiently. In addition, the literature supports the concept of ACS or TES surgeons and emphasise that, in addition to trauma and emergency surgeries, elective general surgery should also be an essential component of training of acute care surgeons [6, 7]. On comparing the surgical practice of TES surgeons and elective practice general surgery (ELEC) surgeons, it was found that TES surgeons admitted more patients and performed more after-hour operations compared with their ELES colleagues [8]. Nowadays, more and more general surgeons are opting for elective surgeries and, as a result, non-traumatic

Future Directions

- To make trauma life support courses compulsory for doctors, nurses and paramedics as a part of their curriculum.
- Need to establish Department of Trauma Surgery in every medical college in the country to improve patient care, training and research in the field of Trauma Care

GOAL

To develop a Trauma System

Robust

Dedicated

Responsible

Accountable

“Save as Many lives and limbs as Possible”

