

## EVALUATION OF TRAUMA CARE CENTERS

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### Objectives

To assess the status and progress made in the implementation of trauma care services across the country along the national highways.

### Study Design/Methodology

NIHFW in consultation with the concerned officers of Dte. General Health Services, randomly selected 41 trauma care centers out of the list of 117 centers (both level II & III) provided by DGHS along the Golden Quadrilateral and North – South and East – West corridors of national highways. While selecting these centers, it was ensured that at least one level II and one level III trauma care centers are included from each of the states through which national highways pass.

To sensitize the State Coordinators and Investigators a national workshop was held at NIHFW. The State Coordinators and the investigators were identified by the respective medical colleges in the state. During this one day workshop, the participants were informed about the project by the faculty of NIHFW and also there was interaction between the participants and the representatives from DGHS. The trauma care centers at Level II and III identified by NIHFW was discussed in detail with the participants and feedbacks received during the discussion were considered while finalising the list of trauma care centres to be evaluated by State Coordinators and Investigators of respective states.

The State Coordinators and Investigators were provided with the check list formulated by DGHS in respect of infrastructure, equipment and man power etc. was also discussed in workshop.

The evaluation study was planned in such a way that while the Investigators move from Level II to Level III trauma care centers, they also review the status of level IV trauma care centers (i.e. Ambulances) positioned on national highways by NHAI. A list of ambulances which were positioned at different stretches on these corridors was obtained from the web site of NHAI and the same was shared with the participants to facilitate the evaluation of level IV trauma care centers.

**Summary of Results:-** Accidental trauma is one of the leading causes of mortality and morbidity in India. It has just 1% of total vehicle in the world but accounts for nearly 6% of the total road accidents. The accident rate of 35 per 1000 vehicles in India is the highest in the world as compared to 10 accidents per 1000 vehicles in the developed countries. Every 12 minutes one Indian dies on the road and 10 times that number are injured. Among them 30% are disabled for the life either partially or totally. The situation will get further exaggerated with the rapidly increasing number of vehicles plying on the Indian roads. Whereas 1971 registered 18.65 lakhs vehicles, it stood at 484 lakhs vehicles in 2000. The increase in the number of vehicles has resulted in steep upward trend in the number of accidents, injuries and deaths.

In developed countries, preventable deaths range up to 70% among trauma patients treated through conventional emergency services. In communities that have established an integrated trauma system, preventable deaths have dropped to between 5% and 10%.

India has 3.3 million kilometres of road network, which is the second largest in the world. Roads are the most commonly and extensively used mode for transportation. Roads in India carry nearly 65% of freight and 87% of Passenger traffic. National Highways aggregating 57737 Km, constitute only 1.7% of total road network. However, this network carries about 40% of the road traffic and is the lifeline of the country. Therefore, any initiative or effort in India to reduce road accidents and injuries/deaths caused thereby must necessarily be developed along this network.

Following a road traffic accident, serious injuries to cardiovascular or central nervous system may result in death of the accident victim that medical intervention can't help. About 50% of the victims in this category die in the first 15 minutes. Decreasing mortality in this group can be achieved only by introducing strategies that prevent recurrence of similar incidents or through safety devices that reduce the magnitude of injuries. 15% late deaths over the next 30 days from the date of accident are due to sepsis and organ failure usually caused by complications arising from the injury. These deaths can be minimised by appropriate post-injury care. Between these two groups is the "second peak," wherein death occurs between one to four hours after the injury. This middle category is of particular interest to the health administrator since most of these deaths are amenable to medical intervention and thus potentially preventable.

The Ministry of Health & FW started a pilot project (1999) during the Ninth five year plan to augment and upgrade the accidents and emergency services in selected State Govt. hospital that are located in most accident prone areas of national highways. The scheme envisaged providing financial assistance (Rs.150 lakh) for upgrading emergency services of selected Government hospitals.

During the 9<sup>th</sup> Five Year Plan, 18 Hospital/Medical Institutions in 3 States/ITS received grant at Rs. 1.5 Crores each for strengthening of emergency facilities of State hospitals of cities located on National Highways. During the 10<sup>th</sup> Plan Rs.110 crore have been allocated. 85 Hospitals/Institutions in 30 States received the grants during 10<sup>th</sup> Plan.

**Mid-term Evaluation of the scheme:-** Some of these institutions that had received the grant in aid under the scheme were inspected by the Regional Directors of MOHFW, Govt. of India. The general feedback was that the scheme had not delivered the expected outputs in terms of trauma

care. In the light of the feedback received and the general consensus that emerged during consultations with various stakeholders, it was proposed to design and develop a network of Trauma Care Centres that would in the first phase cover the entire Golden Quadrilateral connecting Delhi-Kolkata-Chennai-Mumbai-Delhi and North-South and East-West Corridors.

The trauma care network has now been so designed that no trauma victim has to be transported for more than 50 kilometres and a designated trauma centre is available at every 100 Km. The proposed trauma care system project will have the following components:

- (i) Designated levels of Trauma Centres are:
  - (a) L-IV
  - (b) L-III
  - (c) L-II
  - (d) L-I

With a view to strengthen the scheme during the 12th five year plan, DGHS, Ministry of Health and Family Welfare entrusted the evaluation of trauma care centers sanctioned across the country along the National Highways to National Institute of Health and Family Welfare, New Delhi to assess their status and progress made in the implementation of trauma care services. The evaluation study included twenty one level II Trauma care centers, fourteen level III Trauma Care centers and ten level IV trauma care centers (Ambulances).