



TRAUMA CARE GUIDELINES

Guidelines for People Involved in Road Traffic Injuries

2018-2025

Department of Medical Health & Family Welfare
Government of Uttar Pradesh



Uttar Pradesh

Health Systems Strengthening Project

Trauma Care Guidelines for Road Traffic Accidents that is to be implemented in Uttar Pradesh is first of its own kind. Road traffic injuries have emerged as one of the Major causes for Deaths and disabilities in last few years.

The guidelines are framed keeping in view of reducing road traffic accident fatalities by strengthening post-crash trauma care response system through inter-sectoral approach.

ABBREVIATIONS

MORTH: Ministry Of Road, Transport and Highway

NH: National Highway

NHAI: National Highway Authority of India:

ASI: Accident Severity Index

BLS: Basic Life Support

ALS: Advanced Life Support

GIS: Geographical Information System

SDG: Sustainable Development Goal

WHO: World Health Organization

UN: United Nations

IEC: Information Education and Communication

ABC: Airway Breathing and Circulation

EMT: Emergency Medical Technician

GPS: Global Positioning System

SOP: Standard Operating Procedures

CHC: Community Health Centre

PHC: Primary Health Centre

DGMH: Directorate of Medical Health

A&E: Accidents and Emergency

PPP: Public Private Partnership model

CSR: Corporate Social Responsibility

ICU: Intensive Care Unit

AMD'TT: Development of Automatic Driving Testing Track

NH: National Highway

SH: State Highway

IT: Information Technology

PWD: Public Work Development

ASHA: Accredited Social Health Activist

CONTENT

S. No.	Topic	Page No.
1	Introduction	8
1.1	Problem Statement	8
1.2	Situational Analysis	8-10
1.3	Need for Guidelines	10
2	Vision, Goals and Objectives	11-12
2.1	Vision	10
2.2	Goals	11
2.3	Objectives	11
3	Guiding Statements/ Strategy/ Action Plan	11
3.1	Pre-Hospital Care	12-15
3.2	Hospital Care	16-18
3.3	Rehabilitative Care	19-20
3.4	Trauma registry and Surveillance	21
3.5	Intersectoral Approach	21
	ANNEXURE I: FACTS and FIGURES OF STATE	25
	ANNEXURE II : MAPPING OF TRAUMA CARE FACILITIES	31

Executive Summary

Uttar Pradesh (UP) is the most populous state with limited trauma care facilities in both rural and urban areas. UP faces around 100 injuries and 44 fatalities every day as a consequence of road crashes. The road accident Case Fatality Rate for the State is as high as 54 % in comparison to the national level, i.e., 31.4 % (MORTH, 2016). Road Traffic-related injuries, deaths and disabilities are increasing at an alarming rate across UP. The Department of Medical Health and Family Welfare has taken the initiative of development of State Trauma Care Guidelines for the people involved in Road Traffic Accidents (RTA). The State government has made an effort to develop trauma care guidelines to improve the overall health scenario in the State. These guidelines will be helpful in bringing state-wide system coordination, which will further be useful in enhancing the systemic cohesiveness, reduce undesirable variability and improve access to trauma care.

It is the first comprehensive guidelines for the trauma care for the State of Uttar Pradesh. It is a culmination of various internationally and nationally accepted documents, guidelines, and publications in the field of Trauma care.

VISION

The vision of these guidelines is to develop a state-wide effective trauma system that ensures availability, quality of care, affordability, and accessibility for all individuals optimally within one hour (golden hour) following major injury. The system focuses on the entire spectrum of trauma from pre-hospital care, hospital care, and rehabilitative care.

GOAL

The primary goal of these guidelines is to reduce mortality, morbidity or disability from road injuries through an active trauma care response system that encourages the cooperation and coordination among all healthcare providers and stakeholders.

OBJECTIVES

- To avoid preventable death and disability, limit the severity of the injury and sufferings by providing timely access to trauma care (ensuring pre-hospital care, including inter-facility transfers).

- To ensure universal availability of free, comprehensive trauma services at primary, secondary and tertiary healthcare facilities.
- To provide optimal trauma care to people injured through an effective hospital and rehabilitation care practices, compliance assessment and professional education.
- Enable universal access to free essential drugs, diagnostics, emergency ambulance services, and emergency medical and surgical care services in public health facilities.
- Ensure improved access and affordability of secondary and tertiary care services through public-private partnership approaches.
- To increase community awareness through public education and primary prevention.

The key guidelines are as follows:

- The State will establish a separate Cell for emergency care/ trauma care in the Department of Medical Health and Family Welfare, which will especially look after the trauma health care system, including infrastructure, planning, evaluation, and future development. The Cell will also coordinate between health facilities (e.g., trauma care facilities, hospitals, medical colleges, and ambulances).
- The Department of Health will establish strong linkages between ambulances and all levels of health care facilities.
- The State will ensure establishing a trauma management information system for on-going injury surveillance and trauma registry system.
- The State will promote “Good Samaritans” by protecting them against any legal liabilities.
- A Universal Emergency Toll-Free number will be in place for ambulance assistance.
- The Department of Health will ensure placing of Basic Life Support Ambulances every 50 km along the National Highways to reduce the response time so that the patient reaches the hospital within the golden hour.
- The Department of Health will ensure the readiness of Community Health Centres (CHCs) by establishing Basic Trauma Care Units within the catchment area of 5 km, along with National Highways to address the injured for providing primary pre-hospital trauma care timely. The trauma units at the CHCs will be named as “*Prathmik Aghat Upchar Kendra*”

- The Health Department will strengthen the trauma care facilities by establishing Advanced Trauma Care units for providing secondary care services in the existing Divisional level Hospitals and District Hospitals by adequate staffing & capacity building, essential equipment & supplies, transfers, and referrals. The Divisional Level Hospitals and District Hospital will be upgraded for providing L2 and L3 level of Trauma care facilities respectively. The Divisional level Hospitals and District Hospitals will be named as “*Uchikrit Aghat Upchar Kendra*” and “*Uchh Aghat Upchar Kendra*” respectively.
 - Accident and Emergency (A&E) care unit will be made mandatory in all the Trauma Care Centres, and all admissions to the hospitals will be ensured through the A&E units.
 - The Standard Operating Procedures (SOPs) and Protocols for transfer and referral of the injured will be available at each health care facility.
 - Engagement of the private sector will be ensured for support in trauma care system.
 - For the continuum of care, rehabilitative care will be ensured and it will be started as soon as the patient is stable.
 - The inter-sectoral approach will be adopted to prevent road traffic-related deaths and injuries in the State.
-

1. INTRODUCTION

1.1 PROBLEM STATEMENT

Road traffic injuries are a burden on the public health system as it is one of the leading causes of deaths globally; it is also the leading cause of death among the young generation.

In India road injuries are one of the top four leading causes of death and health loss among persons of age group 15-49 years (MORTH). It is evident that those injured in Road Injuries face out of pocket expenditure more than double than those of any other health conditions requiring hospitalization, in many instances it turns into catastrophic financial burden to those afflicted by crashes. Consequently, accident severity expressed in terms of the number of persons killed per 100 accidents in India has gone up from 29.1 in 2015 to 31.4 in 2016, while it has been almost **54 percent in Uttar Pradesh** in 2016.

1.2 SITUATIONAL ANALYSIS

Uttar Pradesh (UP) is the sixth most significant contributor to the number of accidents amongst all the states of India. It is worthwhile to note that the State has witnessed the highest number of death cases due to road traffic accidents among all the Indian states. U.P. faces around 100 injuries and 44 fatalities every day as a consequence of road crashes. The road accident Case Fatality Rate for the State is as high as 54 % in comparison to the national level, i.e., 31.4 % (MORTH, 2016).

In the State, the trauma care facilities are limited to the major cities, thus resulting in increased fatality rate from traffic accidents. The analysis of the MORTH data shows that during the last five years, road accidental fatalities in UP have increased at the rate of 5% per year while the population of the State has increased only at the rate of 1.8% per year. This is one of the pressing issues as the rate of fatality has been rapidly growing.

According to the latest figures of MoRTH, the majority of accidental road deaths occurred on the national highways in UP. The data shows that nearly 40 percent of accidental deaths happened on the National Highways. Proportion share of accidental deaths on the National Highways remained same over the period, except the year 2013 when the proportion of deaths on National Highways (NH) had decreased drastically. Similarly, the proportionate share of state highways in accidental deaths remains same around 30 percent over the period of last 8 years (MORTH, 2016).

Trauma Care Facilities

Currently, the Tertiary level trauma care services in the State are mainly limited to 21 Government and 29 Private Medical Collages. The government has taken several initiatives to improve the trauma care in the state to meet the demands of the public. One of such efforts is to increase the number of trauma care facilities in the state. Currently, the state has 43 approved trauma care facilities, the State Government funds 37, and six receive funding from the Central Government.

Out of 43, construction of 30 trauma care facilities has been completed. Currently, 26 centres are functional where the services are limited only to the basic trauma care services. The state is keenly looking for the appointment of specialists and orthopaedic surgeons at these facilities.

Plastic & Burn Units

Twenty-eight Plastic & Burn Units have been developed and another 12 units are in process of completion.

Black Spots

According to Ministry of Road Transport & Highways (MoRTH), Government of India, road accident black spot on National Highways is a road stretch of about 500m in length in which either 5 Road Injuries (involving fatalities/grievous injuries) took place during last three calendar years or 10 fatalities took place during last three calendar years.

According to National Highway Authority of India (NHAI), hazardous locations are evaluated based on Accidents Severity index (ASI). Hazardous spots with Accidents Severity Index (ASI) more than Threshold value ($Average\ Severity + 1.5 * Standard\ Deviation$) is being treated as Black spots.

The Transport Department of Uttar Pradesh had identified nearly 1057 black spots across the State (see annexure). These black spots are situated on National Highways/ State Highways and Other Roads all across the Uttar Pradesh State, although 84% (883) of these Black Spots are along National & State Highways (there is no segregation of remaining black spots which are situated along other roads).

Basic Life Support Ambulances

The state has 1488- Basic Life Support (BLS/108) ambulances for emergency care. These ambulances are placed at strategic locations, usually in an accessible health care institution. Approximately 20% of ambulances are placed near National Highways while 22% of ambulances are placed near State Highways. The state is planning to have another 712 BLS ambulances.

Advanced Life Support (ALS) Ambulances

150 Advanced Life Support (ALS) Ambulances have been deployed for referral management of critical patients.

Health App

A GIS-enabled Health App is being rolled-out which would enable the users (patients/caregivers) to locate the nearest hospital, the services (such as Trauma care) available and seek referral services and would generate alerts at the health facility for preparedness.

1.3 NEED FOR THE GUIDELINES

It is evident that Road Injuries are preventable and many developed countries have been successful in improving their road safety through the adoption of guidelines and action plans. However, the Department of Medical Health and Family Welfare lacks guidelines focusing on making an effective Trauma Care system. These guidelines focus on the State's commitment to bring a significant reduction in mortality and morbidities due to road injuries.

Government's Approach

Keeping the ambitious target of achieving the SDG goal of reducing the number of accidents to half by 2020 in hindsight, the Government of India along with the State Government is taking stringent efforts towards reducing the injuries and preventing deaths by focussing on "4Es" vis (i) Education; (ii) Enforcement; (iii) Engineering; (iv) Environment and Emergency care of road accident victims. The Government of India has been focusing on all these four approaches in its policies and programmes.

The Government of India has committed to achieving the global Sustainable Development Goal (SDGs) 3.6, i.e., the number of deaths and injuries due to road traffic accidents have to be reduced to half by 2020. However, the State lacks a particular strategy focusing on making an effective system for Trauma Care.

2. VISION, GOALS AND OBJECTIVES

2.1 VISION

The vision of these guidelines is to develop a state-wide effective trauma system that ensures availability, quality of care, affordability and accessibility for all individuals optimally within one hour (golden hour) following major injury. The system focuses on the entire spectrum of trauma from prehospital care, hospital care, and rehabilitative care.

2.2 GOAL

The primary goal of these guidelines is to reduce mortality, morbidity or disability from Road Accident injuries through an active trauma care response system that encourages the cooperation and coordination among all healthcare providers and stakeholders.

2.3 OBJECTIVES

- To avoid preventable death and disability, limit the severity of the injury and sufferings by providing timely access to trauma care (ensuring pre-hospital care, including inter-facility transfers).
- To ensure universal availability of free, comprehensive trauma services at primary, secondary and tertiary healthcare facilities.
- To provide optimal trauma care to people injured through effective hospital and rehabilitative care practices, compliance assessment and professional education.
- Enable universal access to free essential drugs, diagnostics, emergency ambulance services, and emergency medical and surgical care services in public health facilities.
- Ensure improved access and affordability of secondary and tertiary care services through public-private partnership approaches.
- To increase community awareness through public education and primary prevention.

3 GUIDING STATEMENTS/STRATEGIES/ACTION PLAN

Thrust area of the se guidelines – Pillar 5 (WHO framework)

The guidelines follow the WHO's recommended five pillar approach for the decade of action for Road Safety 2020. The major thrust of these guidelines is on Pillar 5 (i.e., post-crash response) suggested by WHO. These guidelines specifically emphasizes on emergency care response to injured.

Figure 1: PILLARS OF THE DECADE OF ACTION FOR ROAD SAFETY (2011-2020)



Source: UN-WHO Framework

3.1 Pre-Hospital Care

The pre-hospital time interval is the duration of post-crash and transportation of the patient to the first trauma facility/hospital. The immediate pre-hospital care is helpful in preventing some delayed deaths due to trauma.

3.1.1 First Responders

Any responder who is assisting the injured by giving first aid, calling for ambulance or helping to reach out the facility is *First Responders*

Statement

3.1.1 - Promotion of *First Responders* for supporting the injured in reaching the nearest facility within the ‘*Golden Hour*’ by protecting them against any legal liabilities.

Strategies for First Responders

- The Health Department along with other departments will do the regular IEC so that they must feel both empowered to act and confident they will not suffer adverse consequences, such as legal liability, as a result of helping someone who has been injured.
- Identification and training of First Responders

Action Plan for First Responders

Bystanders/ First Responders are often present at the scene when an accident occurs, and they generally fail to recognize the seriousness of the injury. Evidence suggests that management during the *first hour of injury (golden hour)* is critical for saving many lives of accident victims.

For this purpose, training of Bystanders/First Responders will be done; the people for training will be identified from the nearby black spots.

The communities are the first responders in a trauma situation and will be prepared and empowered to manage needs of the injured. The Department of Medical Health and Family Welfare (DOMHFW) will use the pool of 1,45,000 ASHAs in conducting knowledge and awareness activities among the general public. The DOMHFW will develop and maintain a program for public information and education on prevention of injuries in collaboration with other departments.

The DOMHFW will conduct training on capacity building and regular training in First Aid to the people who are near the highways like toll people workers, police, teachers, drivers and volunteers from neighbouring villages.

The Department of Medical Health and Family Welfare will train bystanders/ First responders on the following points:

- (How to) Protect the scene
- (How to) Summon help
- (How to) Make an emergency removal
- (How to) Assess the physical state (check vital functions - consciousness, circulation, and breathing)
- (How to) Respond to visible bleeding, unconsciousness, breathing problems, and shock, to enable the injured person to survive whilst awaiting the arrival of the emergency services.

Role of Bystanders/ First Responders:

1. Contacting the emergency services, and calling for help
2. Taking action to secure the scene — such as preventing further crashes, preventing harm to rescuers and bystanders, and controlling the crowd gathered at the scene;
3. Organizing people and resources - keeping bystanders away from the injured so that helpers can get on with rescue operations, and organizing people into groups (one group for comforting the victims, their friends and their relatives, another group for transporting the patients, and another group for actually administering the first aid);
4. First Aid – Treatment will follow simple first aid (ABC) principles, with basic airway manoeuvres and control of haemorrhage by pressure being the most important interventions. Patients will not be moved unless they are in danger of further injury.
5. Coordination of physical and medical rescue- Extrication of trapped casualties needs close integration of physical and medical rescue, which requires prehospital care for which the first responder will understand fire service extrication procedures. Transporting the injured persons to a hospital if no ambulance is available.

3.1.2 Universal Emergency Toll Free Number

Statement

3.1.2 Universal Emergency Toll free number will be in place for ambulance assistance.

Strategy

- In place of multiple emergency numbers, there will be only one toll free number for emergency response.
- This toll-free number will be displayed along the national highways, state highways and other roads and also at the blackspots.

Action Plan

- ❖ Universal emergency toll free number will be operational in the state in all emergency vehicles (108/102 and other vehicles used for emergency).
- ❖ When contacted, these ambulances will reach the injured at the earliest so that the injured can be transferred to the nearest facility within the *Golden Hour*.

3.1.3 Basic Pre-Hospital Trauma Care

Statement

3.1.3 Basic Life Support Ambulances will be at every 50 km along the Highways to reduce the response time so that the patient reaches the hospital within golden hour.

Rationale - The health department will ensure that no injured person will be transported for more than 50 kilometres, as the designated trauma care facility will be available at every 100 KM. (Source- National Highway Operational Guideline, MOHFW)

Strategy

- The Health Department will procure a sufficient number of ambulances so that timely transfer of patients to the nearest appropriate facility can be done.
- Strengthening of Ambulances- Training of EMTs, adequate equipment and supplies.
- Standard Operating Procedures (SOP's) for pre-hospital triage.

Action Plan

- ❖ In coordination with Ministry of Road Transport and Highways (MORTH) and State Highway Authority (SHA) distance of National highway, State highway, expressway and other roads will be calculated. Once the total distance is calculated, exact number of ambulances can be calculated so that we can place one ambulance at every 50km.
- ❖ The Department of Medical Health and Family Welfare will ensure following in order to **strengthen the ambulances:**
 - The Health Department in Coordination with Different Concerned Department such as fire and police will establish a central control room at the state level. The central control rooms and ambulances stations will be linked with wireless sets for facilitating two-way communication between sender and the receiver.
 - All the ambulances will have good communication systems and vehicle tracking system. GIS enabled health app will be in place to locate the nearest hospital and GPS systems will be installed in all ambulances and Hospitals.

- The ambulances will be appropriately and adequately equipped (equipped with oxygen cylinders, suction machines, ventilators and complete cardiac care equipment required in emergencies).
- Adequate care during transportation by trained Emergency Medical Technicians (EMT's).
- There will be 2 people per shift per ambulance. The staff will both be trained paramedics qualified in driving and navigation.
- Standard Operating Procedures (SOP's) for pre-hospital triage and transport to appropriately designated hospitals in sync with the type and gravity of their injury will be framed.
- In case of severe accidents, the paramedic staff will be trained and equipped to control blood loss and stabilise the patient as much as possible and transport him to nearest hospital.
- The EMT in these vehicles will be trained to recognize the severity of the injured so that the delay can be avoided.

3.1.4 Advanced Pre-Hospital Trauma Care

Statement

3.1.4 Readiness of healthcare professionals of DHs/CHCs/PHCs/ within the catchment area of 5 kilometers along with National Highways / State Highways/Expressways to address the injured for providing advanced pre-hospital trauma care timely.

Strategy

- Identification of the CHCs falling within the catchment area of 5 kilometers along with National Highways / State Highways/Expressways.
- The Department of Medical Health and Family Welfare *will train staff* (physicians or highly skilled paramedics, which will be positioned at CHC or nearby private hospitals or other volunteers) in providing advanced pre-hospital trauma care.

Action Plan

- ❖ The Government will ensure availability of health professionals such as doctors/ nurses, equipment and supplies round the clock at the CHC level. These providers will perform following functions:
 1. At least one ambulance will be placed at the nearest health facilities along with expressways and national highways within the distance of 5 KM along with highways.

2. Provide immediate stabilization of the victim at the scene.
3. Perform invasive procedures and transport the victim to the nearest hospital while providing further treatment en route.

3.2 HOSPITAL CARE

Hospital Care of injured refers to continuum of trauma care which is inclusive of stabilization of injured provision of emergency care and rehabilitative care upon reaching the nearest health facility.

All the health facilities (Primary, Secondary and Tertiary) will provide effective first aid to the injured and the definitive care will be available in health facilities like Medical College Hospitals, District Hospitals and Trauma care centers.

Statement

- 3.2.1 The preparedness of the trauma care facilities for location & functionality of trauma care facilities, triage, adequate staffing & capacity building, essential equipment & supplies, transfers and referrals.**
- 3.2.2 There will be a designated cell for emergency care/trauma care in the Department of Medical Health and Family Welfare (DOMHFW).**
- 3.2.3 Accident and Emergency (A&E) care unit will be made mandatory in all the Trauma Care Centres and all admission to the hospitals will be ensured through the A&E units.**
- 3.2.4 Standard Operating Procedures (SOPs) and Protocols for transfer and referral of the injured will be available at each health care facility.**
- 3.2.5 Engagement of private sector for support in trauma care system.**

Strategy

- **Emergency Care/Trauma Care Cell in Department of Medical Health and Family Welfare (DOMHFW)** - This will be a separate cell under DGMH.
- **Location of Trauma care facilities** - The state will follow the operational guidelines for trauma by MOHFW for every 1400 kilometres which state the following requirements:
 - Level I Trauma centre: 2
 - Level II Trauma centre: 4-6
 - Level III Trauma centre: 6-8
 - Level IV (ambulance): 28

- **Triage** - The treatment of the injured will be categorised as per the criteria of triage and the hospitals will be prepared for the same.

Note- Triage is the process of determining the priority of patients treatments based on the severity of their condition. This rations patient treatment efficiently when resources are insufficient for all to be treated immediately. The term comes from the French verb trier, meaning to separate, sift or select.

Category for Triage-

- Those who are likely to live, regardless of what care they receive.
- Those who are unlikely to live, regardless of what care they receive.
- Those for whom immediate care might make a positive difference in outcome.

➤ **Hospital based emergency care for the injured**

- **Identification of Core Areas in a Trauma Care in each health facility.**
- **Accident and Emergency (A&E) Care Unit-** All efforts will be made for the strengthening of these units.
- **Staffing and Training** - Dedicated post-crash trauma team at various levels will be there at every trauma centre. The trauma team will be trained on evidence-based management of trauma.

➤ **Transfers and Referral**

All the trauma care facilities will have well-coordinated referral mechanism with the available tertiary care public/ private health facilities. Trauma care facilities will follow the state level developed referral guidelines. Transfer and referrals will be strategized as per the following table:

Referral Point A (trauma facility from where the patient has to be referred)	Referral Point B (higher level trauma facility)
Smooth and safe transportation of patient to Point B.	Preparedness of the hospital to prevent delay in receiving the referred patient.
Equipped transportation vehicle (trained staff and equipment) Adequate manpower Smooth Networking system Documentation of referred patient	Trauma Team (Specialist/ Nurses/ EMT) Alert System Patient receiving area Facilities for adequate diagnosis Documentation of received patient

Requirements for referral from point A-B

- **Engagement of private sector** – For support in the trauma care facilities Private sector will be involved through Public Private Partnership model (PPP). The government will identify the

private sectors providing medical services to the Trauma Victims, and monitoring of these services which are being provided to the Trauma Victims by the identified private partners.

Action Plan

- ❖ **Emergency Care/Trauma Care Cell in Department of Medical Health and Family Welfare (DOMHFW)-** This cell will ensure the following:
 - Planning and implementation for Infrastructure, Procurement, Staffing, Training and Development.
 - Monitoring and Evaluation of trauma care services
 - Researches and Innovation related to Trauma Care.
 - Documentation of Trauma care facilities
- ❖ **Location of Trauma Care Facility** - The state will scale up the establishment of new trauma care facility as per the Ministry of Health and Family Welfare (MOHFW) guidelines. The designated trauma care facility will be available at every 100 KM. The locations of the trauma care facility will be such that trauma care facilities are located within 0-4 km from the national highway, and the higher levels of referrals are located within 30 Km of distance.
- ❖ **Manpower and Equipments in Trauma Care Facility-** All the State/centrally funded trauma care facilities will have minimum L3 level staff and equipment requirements mentioned in the operational guidelines of MOHFW, Government of India. The State will ensure that at least L3 level of staffing and equipment by 2020. Considering the magnitude of injuries on National Highways, priorities will be given to Trauma Care Facilities falling in the vicinity of National Highways.
- ❖ **Ambulance-** The Department of Medical Health and Family Welfare will ensure that one dedicated working ambulance will be attached to each Trauma Care Facility.
- ❖ **Triage** - *Triage is the process of sorting injured people into groups based on the severity of their conditions so that the most serious cases can be treated first.* Patients will be evaluated quickly for their vital signs, chief complaint, and other key indicators to be categorized as:
 - Category I (obvious life-threatening emergency)
 - Category II (Potential for life-threatening emergency)
 - Category III (non-life-threatening emergency)
- ❖ **Hospital based emergency care for the injured**
 - **Core Areas in a Trauma Care Facility** - The state will adopt the following criteria for establishing effective trauma care facility: Patient access, Patient care areas,

Facilities for patient's relatives, Clinical Support Services, Staff facilities and Administration support

- ***Accident and Emergency (A&E) Care Unit***- All patients will be triaged on arrival to the A & E unit. After the triage is done, the patients will be shifted to various units (Critical Care Unit or Intensive Care Unit) depending on the criticality of the patient. Safe handling of patients to continuum care must be ensured.
- ***Staffing and Training*** - Accident & Emergency Department will be managed by Emergency Physicians or specialists with emergency care training. Training on evidence-based management of trauma as a part of Standard treatment Approach will be rolled out in the state for the performance appraisal of doctors.
- ❖ **Transfers and Referral** - The attending doctor will evaluate the patient in the Emergency unit before the transfer to another ward or facility. In the transfer of patients, all safety measures and appropriate care will be provided.
- ❖ **Engagement of private sector** - Private sector will be utilized for achieving in giving better & quick response (within golden hour) to a Trauma victim and this can be achieved by implementing Public Private Partnership for the following activities:
 - Establishing collaboration for first aid services with NGOs.
 - Collaboration with private sector for management of road traffic accident cases.
 - Private providers will be encouraged through provision of appropriate skills for trauma care.
 - Involvement of private sector in smooth functioning of a unified emergency response system.
 - Emergency room-based injury surveillance system in collaboration with private hospitals is proposed.
 - Corporate Social Responsibility (CSR) will be encouraged for trauma care.

3.3 REHABILITATIVE CARE

Rehabilitative care: it is a treatment designed to facilitate the process of recovery from injury, illness, or disease to as normal a condition as possible. It is to restore some or the entire patient's physical, sensory, and mental capabilities that were lost due to injury.

Statement

- 3.3. For continuum of care, rehabilitative care will be ensured and it will be started as soon as the patient is stable.

Note- Continuum of care refers to complete care that a Trauma Victim will get post road accident; it includes various stages of treatment starting from first aid to rehabilitation care.

Strategy

- There will be rehabilitation unit at each trauma care facility (L2 Level) equipped with adequate manpower (Physiotherapist, Vocational therapist, speech therapist, and counsellors).

Action Plan

- ❖ **The operational parameters for rehabilitation** at referral system will require Integration in the primary care flowchart at the following levels:
 - At primary treatment
 - At ICU level
 - At ward care
 - At Discharge

3.4 TRAUMA SURVEILLANCE REGISTRY AND RESEARCH

Statement

3.4. The State will initiate injury surveillance and trauma registry systems.

Strategy

- All the trauma care facilities will be linked to the National Injury Surveillance, Trauma Registry, and Capacity Building Centre for data collection and training.

Action Plan

- ❖ Based on available guidelines, checklists would be developed to monitor and ensure Trauma care facilities at respective levels of service provision.
- ❖ Emergency Care Research and Data Collection to Guide Post-Crash Response- Data on injuries and injury events can be used to optimise post-crash services and inform large-scale injury prevention strategies.
- ❖ The State will adopt the WHO guidelines for community and facility-based injury surveillance, as well as a standardised data set to facilitate clinical quality improvement and prevention activities.

3.5 INTERSECTORAL APPROACH

Statement

3.5- Inter-sectoral Approach, to prevent road traffic-related deaths and injuries in the state.

Strategy

- A State Road Safety Cell with representation from all concerned departments is in place. It will look into the Inter-sectoral coordination through detailed action plans and monitoring frameworks.

Action Plan

- ❖ Inter-sectoral coordination envisaged to achieve road safety and reduce injuries/deaths:

Departments	Planned Coordinated Action
Road Transport	(a) Improving vehicle standards: Focus on ensuring that vehicles in circulation are well maintained and meet required standards (brakes, tyres, seat-belts, regular check-up), including crash-testing standards; (b) Development of Automatic driving testing track (AMDTT) in each district; (c) Solar lights at all National/State Highways; (d) Publicity vans to create awareness about prevention of road traffic accidents; (e) More interceptors to be deployed to help road accident victims.
Education	To introduce Traffic rules chapters in syllabus
Home	(a) Enactment of laws to address speeding and drink-driving and to ensure the use of motorcycle helmets, seat belts and child restraints need to be enacted and enforced, supported by government commitment and funding; (b) Education of police personnel; (c) Breath Analysers to curb drunken driving.

Medical Education	Develop curriculum on Trauma Care including Triage Management.
Madya Nishedh	(a) IEC against Drunken driving (b) No liquor shops will be established within the range of 200 meters at NH/SH
Information Technology	(a) Development of Transport department Helpline (1800-1800-151)/Website (roadsafety.org) and WhatsApp application for road accident victims/relatives; (b) Development of IT applications to ensure prompt response for post-crash care
Public Works Department	a) Ensure proper condition of roads. 1240 black spots have been identified among which 537 belong to PWD; (b) Build Pedestrian and cyclist friendly road infrastructure.
Information& PR	Public education/IEC/Advertisement related to road safety through different channels such as Cinema/TV/Hoardings etc

REFERENCES

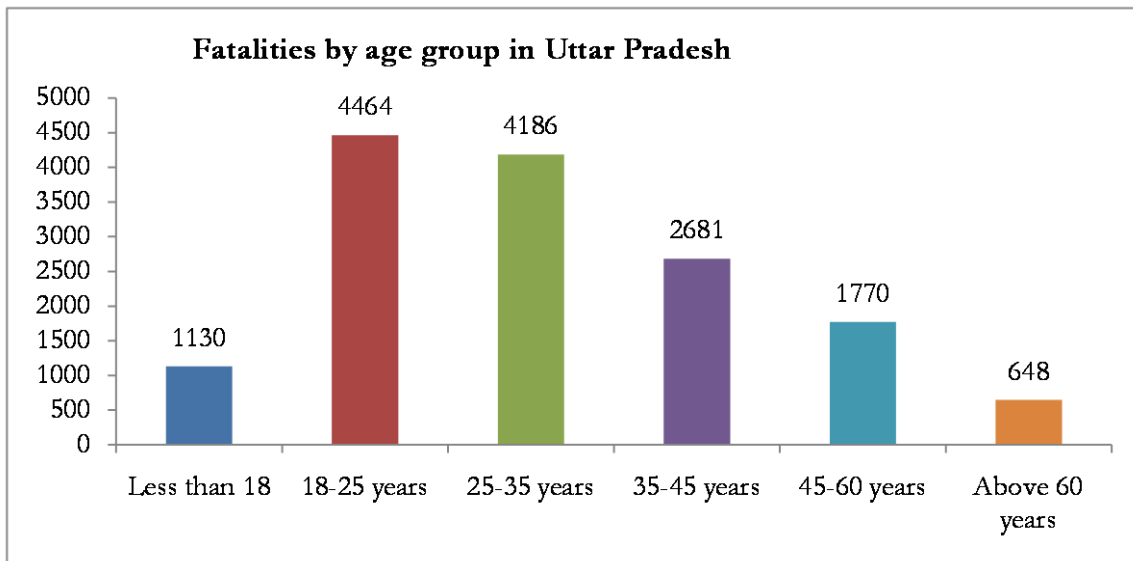
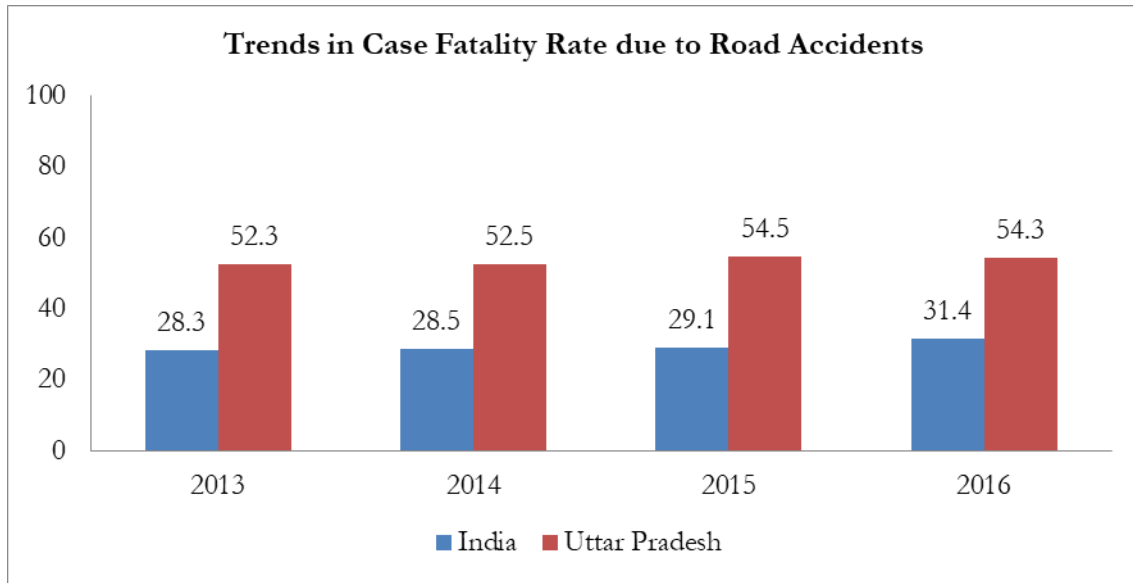
- World Health Organization. Violence, Injury Prevention, World Health Organization. Global status report on road safety 2013: supporting a decade of action: World Health Organization; 2013.
- http://www.who.int/violence_injury_prevention/road_safety_status/2013/en/Kumar GA, Dilip TR, Dandona L, et al. Burden of out-of-pocket expenditure for road traffic injuries in urban India. BMC Health Serv Res., 2012, 12:285.
- Gururaj G and Gautham M S. Advancing Road Safety in India: Facts and Figures
- Gururaj G and Gautham M S. Advancing Road Safety in India: Facts and Figures. National Institute of Mental Health & Neuro Sciences. Publication No. 138, Bangalore, 2017.
- Road accidents in India, Government of India Ministry of Road Transport & Highways Transport Research Wing , New Delhi, 2016
- Global report on road safety WHO
- Documents from Ministry of Road Transport and Highways
- Post-Crash Response booklet WHO

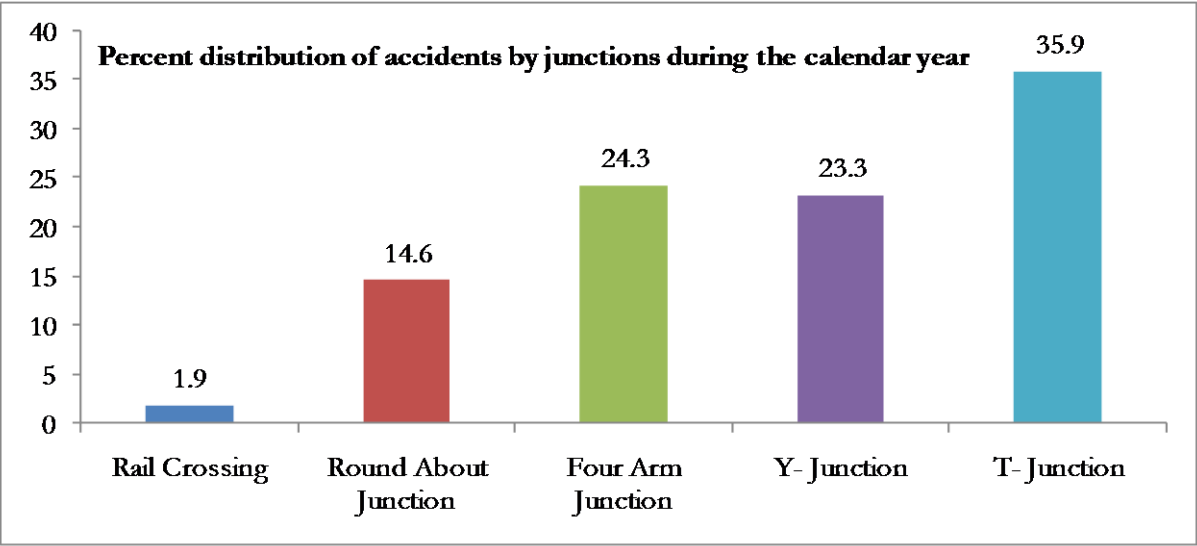
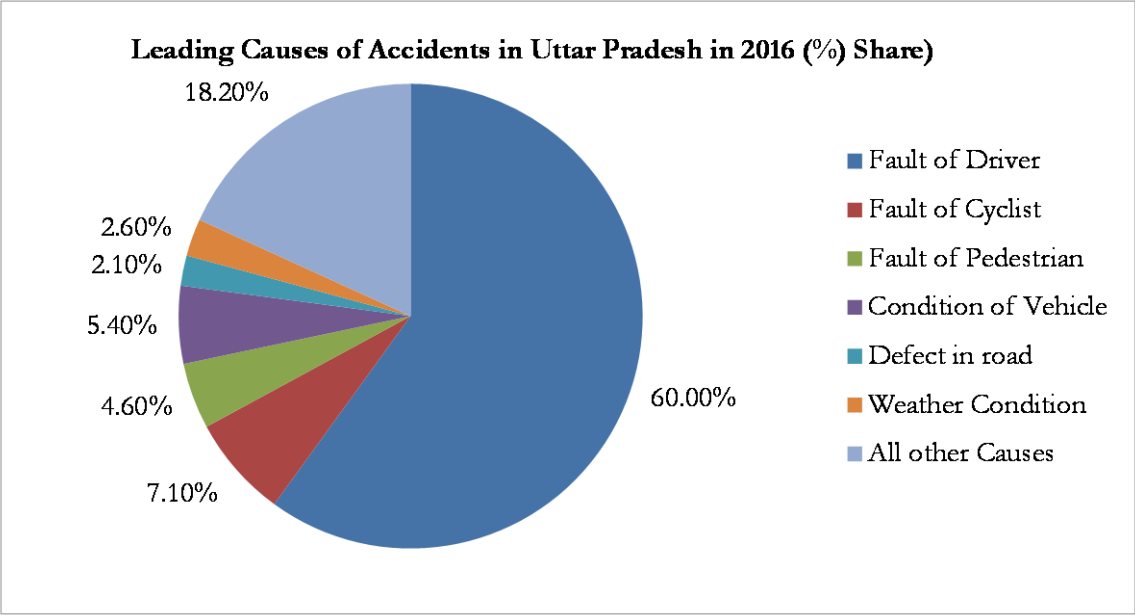
ANNEXURE 1:**Table 1: Number of blackspots by districts**

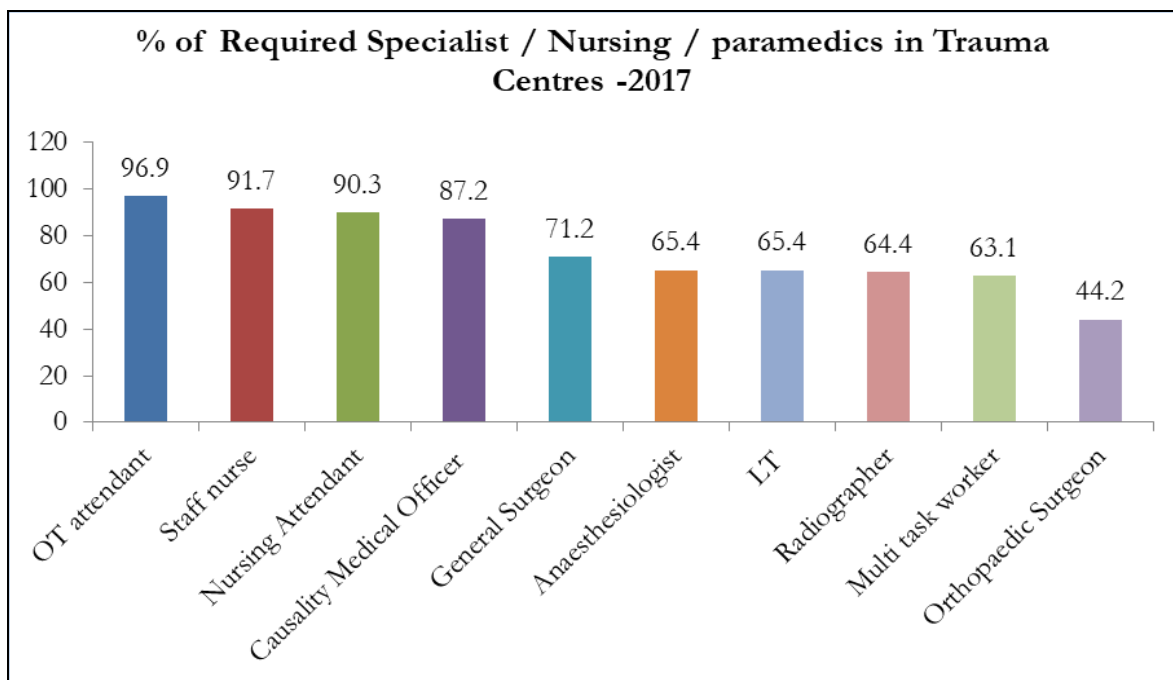
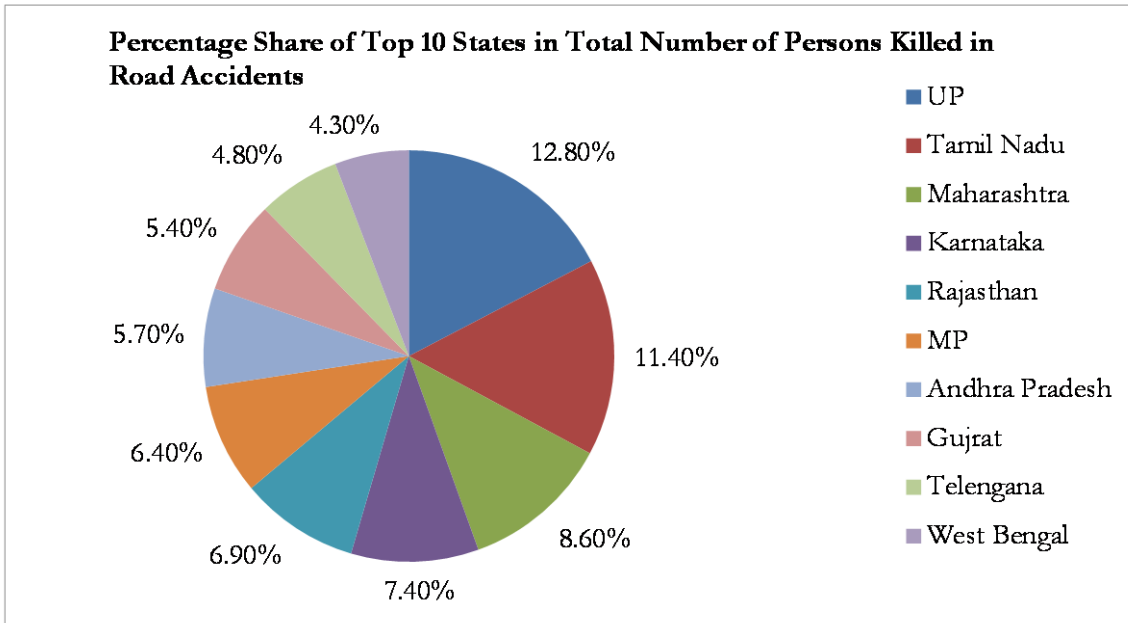
District	No. of Black Spots		Total
	NH	SH	
Lucknow	51	38	89
Allahabad	16	17	33
Chandauli	28	0	28
Unnao	13	9	22
Jaunpur	13	8	21
Fatehpur	20	0	20
Pratapgarh	20	0	20
Kanpur Nagar	20	0	20
Agra	17	2	19
Banda	16	3	19
Sahajanpur	9	9	18
Badaun	0	18	18
Basti	17	1	18
Varanasi	14	3	17
Mathura	5	11	16
Bijnor	12	4	16
Moradabad	15	1	16
Mirzapur	10	5	15
Ghaziabad	13	1	14
Mau	4	10	14
Sultanpur	12	2	14
Sitapur	8	5	13
Hathras	8	4	12
Bulandsahar	6	6	12
Sambhal	12	0	12
Amethi	10	2	12
Barabanki	12	0	12
Shamli	0	11	11
Gorakhpur	11	0	11
Etawah	11	0	11
Raebareli	9	2	11
Firozabad	10	0	10
Baghpat	0	10	10
Meerut	10	0	10
Azamgarh	8	2	10
Kushinagar	10	0	10

District	No. of Black Spots		Total
	NH	SH	
Deoria	10	0	10
Bareilly	6	4	10
Mahoba	4	6	10
Kaushambi	9	1	10
Santkabir Nagar	10	0	10
Bahraich	5	5	10
Aligarh	6	3	9
Amroha	9	0	9
Kannauj	9	0	9
Kanpur Dehat	7	2	9
Gautambudh Nagar	8	0	8
Sonbhadra	3	5	8
Rampur	8	0	8
Chitrakoot	8	0	8
Auraiya	8	0	8
Lakhimpur Kheri	3	5	8
Kasganj	0	7	7
Mainpuri	0	7	7
Hapur	7	0	7
Eata	6	0	6
Muzaffarnagar	6	0	6
Saharanpur	0	6	6
Siddhrath Nagar	5	1	6
Jhansi	5	0	5
Bhadohi	4	1	5
Ballia	2	3	5
Gazipur	5	0	5
Faizabad	5	0	5
Balrampur	5	0	5
Gonda Devipatan	5	0	5
Hardoi	4	1	5
Hamirpur	4	0	4
Ambedkar Nagar	0	4	4
Shravasti	4	0	4
Maharajganj	0	3	3
Lalitpur	2	0	2
Pilibhit	2	0	2
Urai	1	0	1
Farrukhabad	0	0	0

Facts and Figures in the State







Source: Data collected by Directorate of Health, Uttar Pradesh, November, 2017

Available Trauma Care Facilities and Distance From National Highways in Uttar Pradesh			
S.No.	Hospital Name	NH Name	Distance from NH
1	Dr Rafi Ahmad Kidwai Memorial Hospital Barabanki	NH-28	0.5
2	Trauma Centre Jasrathpur Aligarh	NH-91	0
3	District Combined Hospital Sanjay Nagar Ghaziabad	NH-24, N	3
4	RML	Faizabad Road NH	0.2
5	District Hospital Sultanpur	Lko Varanasi	0
6	District Hospital Banda		5
7	Trauma Centre Sadar Pratapgarh		8
8	Trauma Centre Jamaiyatpur, Sitapur	NH-24	0.5
9	Trauma Centre SNM District Hospital Firozabad	NM-2	0.1
10	Pt DeenDayal Upadhyay govt Hospital Varanasi	NH-2	50
11	Trauma Centre Hauz Khas Jaunpur	NH-56	0
12	District Hospital Basti	NH-91	0
13	Combined District Hospital Kannauj	NH-28	5
14	MandaliyaSanyuktChikitsalaya Darshan Nagar Faizabad	NH-27	2.5
15	KhatauliMuzaffarnagar	NH-58	1
16	SBD District Male Hospital	Dehradun Saharanpur Road	1
17	District hospital Balia		
18	Dr BR Ambedkar Combined Hospital	NH-2	2
19	ManyawarKanshiram Combined Hospital and Trauma Centr	NH-2	0
20	CHC Moth	NH-27	8
21	CHC Sikandra Rao District Hathras	GT Road	0.2
22	District Hospital Ghazipur and CHC Mohammadabad Ghazipur	Ghazipur Varanasi NH	5
23	DH Unnao	NH-25	2.5
24	Trauma Centre Hardoi		
25	SN Medical College Agra	NH-2	4
26	Divisional District Hospital Azamgarh	NH66	1

Distribution of approved Trauma Care Facilities in Uttar Pradesh and status of their functionality				
S.N o.	District	Place	Current Status	
1	Saharanpur	District Hospital	Functional	
2	Ghaziabad	District Hospital		
3	Lucknow	RML Hospital		
4	Varanasi	DDU Hospital		
5	Kanpur City	Bhagwan Dei Hospital		
6	Faizabad	DarshannagarDiv Hospital		
7	Basti	District Hospital		
8	Jalaun	District Hospital		
9	Etawah	District Hospital		
10	Fatehpur	District Hospital		
11	Lalitpur	District Hospital		
12	Jaunpur	Jaunpur		
13	Kannauj	Kannauj		
14	Azamgarh	District Hospital		
15	Hardoi	Hardoi		
16	Bulandshahar	Khurza	Under Construction	
17	Barabanki	District Hospital		
18	Unnao	District Hospital		
19	Sultanpur	On NH-56		
20	Sonbhadra	District Hospital		
21	Ballia	District Hospital		
22	Firozabad	District Hospital		
23	Banda	District Hospital		
24	Moradabad	District Hospital		
25	Aligarh	Jasrathpur	Functional	
26	Jhansi	CHC-Moth		
27	Sitapur	Jamayatpur	Not Functional	
28	Kanpur Dehat	District Hospital		
29	Muzaffarnagar	CHC-Khatauli		
30	Hathras	Sikanadrarau		
31	Allahabad	TB Sapru Hospital		
32	Hapur	GarhMukteshwar	Under Construction	
33	Mirzapur	District Hospital		
34	Khiri	Oeal Town		
35	Bijnaur	CHC-Dhampur	Under Construction	
36	Pratapgarh	District Head Quarter		
37	Bahraich	Old Hospital		
38	Pratapgarh	Lalganj Aajhara		
39	Mainpuri	Bewar		
40	Pratapgarh	Raniganj		
41	Ghazipur	Gaurabazar		
42	Ghazipur	Yusufpur Mohammadabad		
43	SantRavidas Nagar	CHC-Aurai		Yet to start

ANNEXURE II

Mapping of Trauma Care Facilities along with National Highways in Uttar Pradesh : Operational Plan for Trauma Care

1. Number of districts with National Highways:69
2. Number of districts on NH with trauma care facilities: 40
3. Total number of deaths due to road injuries in the State (2017): 20,142
4. Number of deaths due to road injuries reported in districts with NH: 19,049
5. Percent of fatalities in districts with NH: 94%

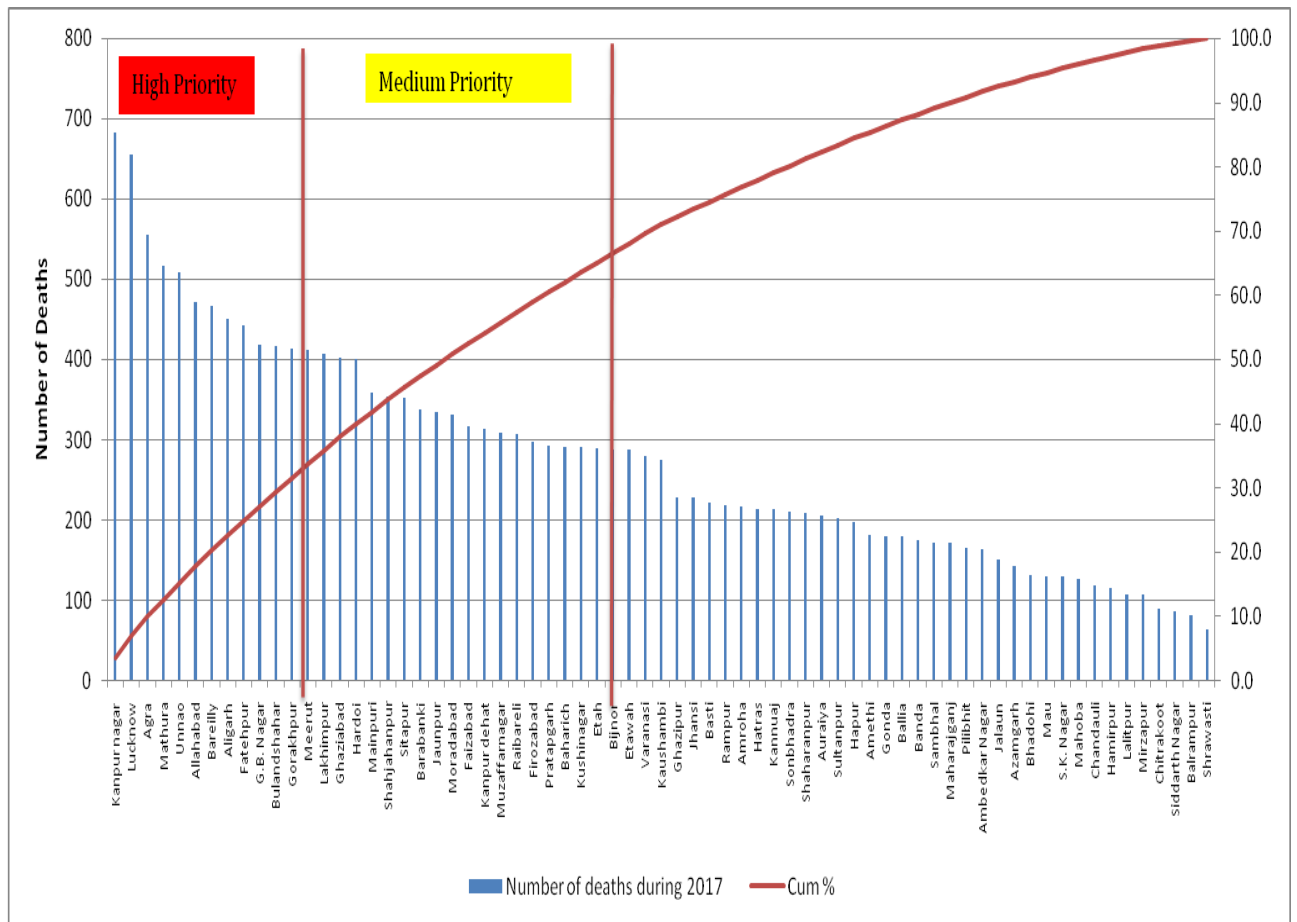
Methodology of mapping of trauma care facilities/Unit

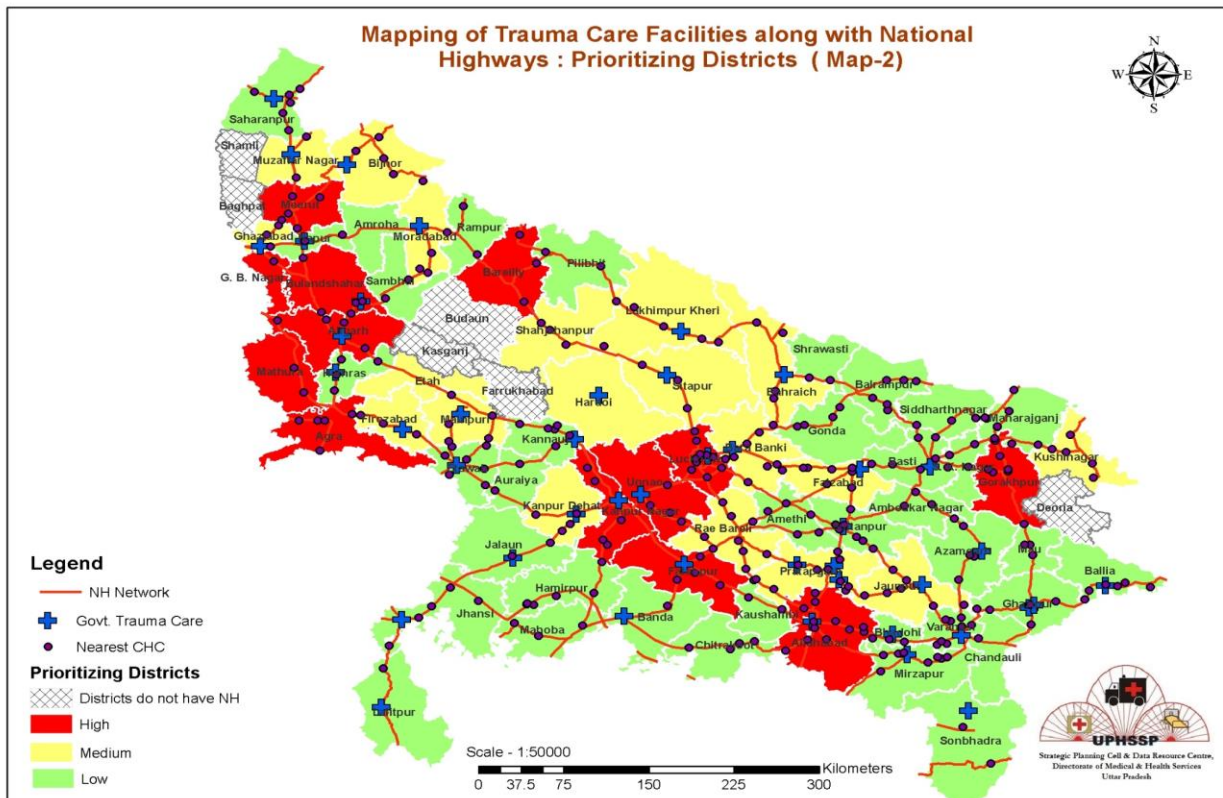
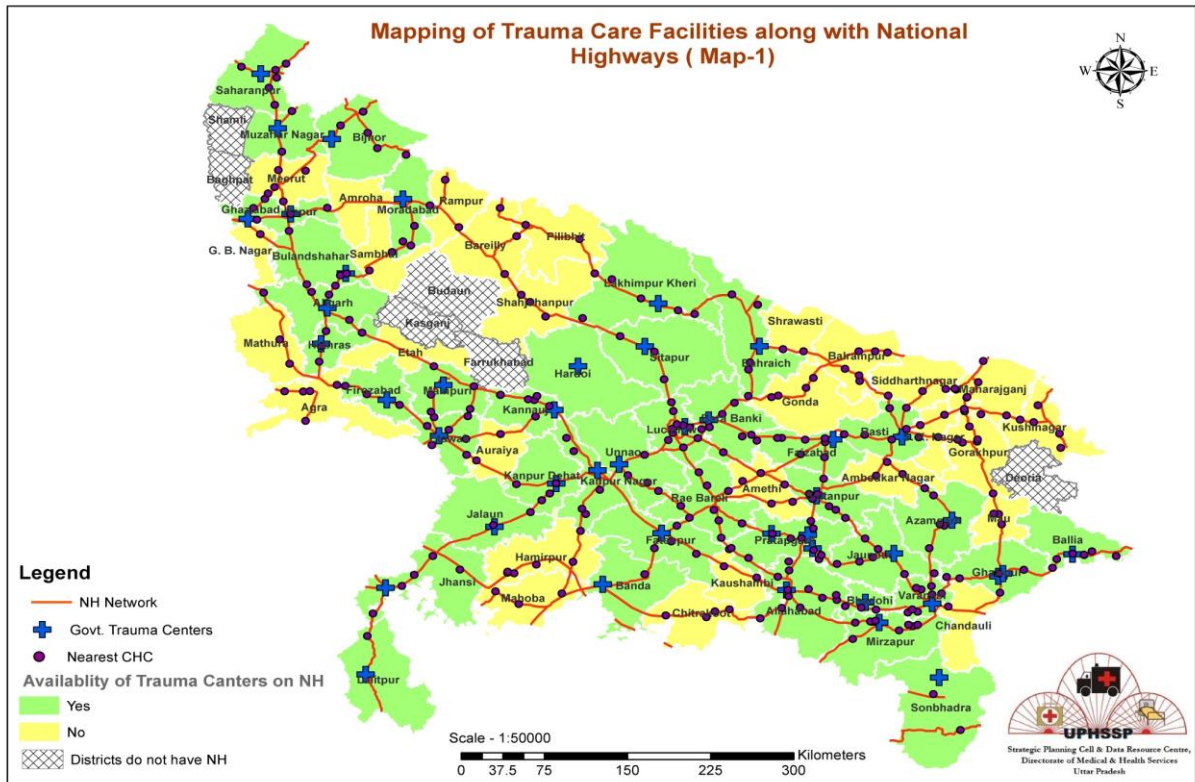
1. Selected districts with National Highways
2. Mapped Trauma care facilities along with National Highways
3. Mapped CHCs along with National Highways (0-5 KMs) : Trauma Care Units can be set up for providing primary care
4. Divided districts into three categories based on number of deaths due to injuries: High, Medium and Low

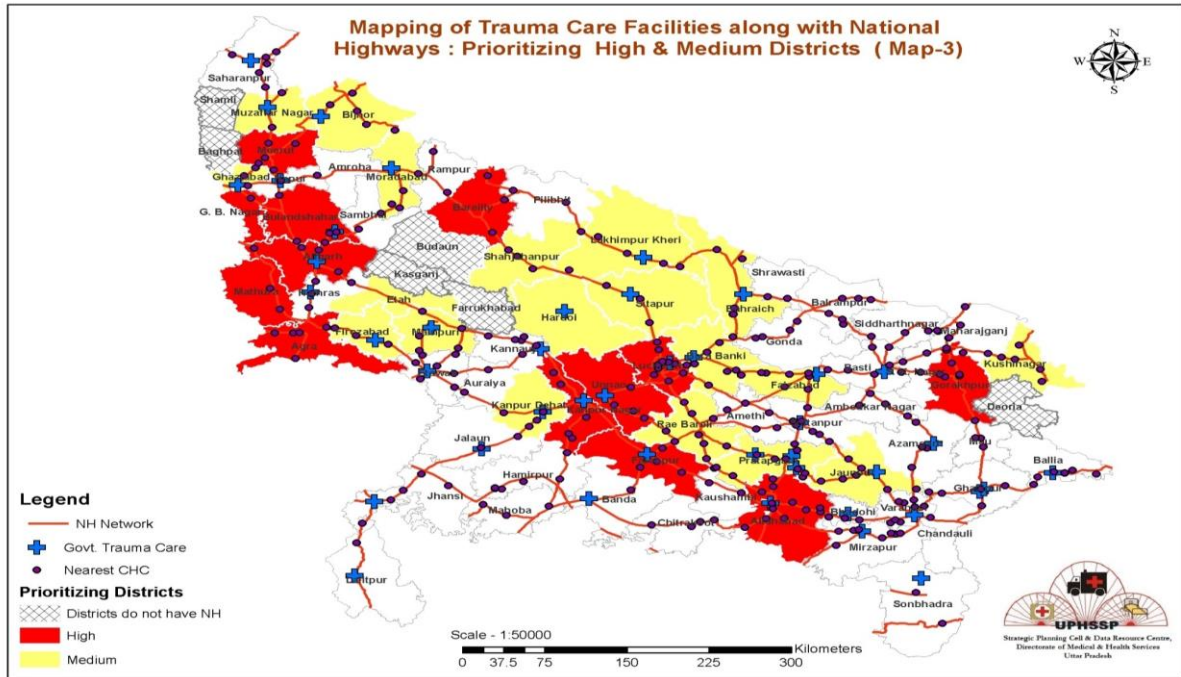
Actions

- State has to build trauma care facilities in Meerut, Agra, Mathura , Gorakhpur , Bareilly, Shahjahanpur, Kushinagar and Raibareli or establish Trauma Care facilities in the District Hospitals.
- **Immediate Strategy:** Strengthen existing Trauma Care Facilities with sufficient workforce and equipment in high (13) and medium priority districts (19). This will cover 66% of total deaths in the NH districts (i.e., 12572 deaths on National Highways)
- 301 identified CHCs along with the National Highways can be strengthened for providing primary trauma care
- Assessment of CHCs and Trauma Care facilities along with National Highways

Prioritizing 32 NH districts would address 66 percent of deaths in NH Districts







- Need to establish Trauma Care Facilities in High and Medium priority districts. The districts are : Meerut, Agra, Mathura , Gorakhpur , Bareilly, Shahjahanpur, Kushinagar and Raibareli

Table: 1 Mapping of Trauma Care Facilities along with National Highways

Name of the District	Number of deaths during 2017	Cum number	Cum %	Categorization of Districts	Availability of Trauma care facilities	Place of Trauma care facilities	National Highway Passing through the District (Yes=1)	Number of CHCS on NH (0-5 KMS)
Kanpur nagar	682	682	3.6	High	YES	Bhagwan Dei Hospital	1	5
Lucknow	655	1337	7.0	High	YES	RML Hospital	1	11
Agra	555	1892	9.9	High	No		1	5
Mathura	516	2408	12.6	High	No		1	2
Unnao	509	2917	15.3	High	YES	District Hospital	1	4
Allahabad	472	3389	17.8	High	YES	TB Sapru Hospital	1	12
Bareilly	467	3856	20.2	High	No		1	2
Aligarh	451	4307	22.6	High	YES	Jasrathpur	1	5
Fatehpur	443	4750	24.9	High	YES	District Hospital	1	3
G.B. Nagar	419	5169	27.1	High	No		1	1
Bulandshahar	417	5586	29.3	High	YES	Khurza	1	4
Gorakhpur	413	5999	31.5	High	No		1	8
Meerut	411	6410	33.7	High	No		1	5
Lakhimpur	407	6817	35.8	Medium	YES	Oeal Town	1	5
Ghaziabad	402	7219	37.9	Medium	YES	District Hospital	1	3
Hardoi	400	7619	40.0	Medium	YES	Hardoi	1	
Mainpuri	358	7977	41.9	Medium	YES	Bewar	1	5
Shahjahanpur	353	8330	43.7	Medium	No		1	4
Sitapur	352	8682	45.6	Medium	YES	Jamayatur	1	3
Barabanki	337	9019	47.3	Medium	YES	District Hospital	1	6
Jaunpur	334	9353	49.1	Medium	YES	Jaunpur	1	7
Moradabad	331	9684	50.8	Medium	YES	District Hospital	1	3
Faizabad	317	10001	52.5	Medium	YES	Darshan nagarDiv Hospital	1	8

Table: 1 Mapping of Trauma Care Facilities along with National Highways

Name of the District	Number of deaths during 2017	Cum number	Cum %	Categorization of Districts	Availability of Trauma care facilities	Place of Trauma care facilities	National Highway Passing through the District (Yes=1)	Number of CHCS on NH (0-5 KMS)
Kanpur	313	10314	54.1	Medium	YES	District	1	4
Muzaffarn	309	10623	55.8	Medium	YES	CHC-	1	2
Raibareli	307	10930	57.4	Medium	No		1	9
Firozabad	297	11227	58.9	Medium	YES	District	1	3
Pratapgar	293	11520	60.5	Medium	Yes	District	1	10
Baharich	291	11811	62.0	Medium	YES	Old	1	5
Kushinaga	291	12102	63.5	Medium	No		1	5
Etah	289	12391	65.0	Medium	No		1	
Bijnor	287	12678	66.6	Medium	YES	CHC-	1	4
Etawah	287	12965	68.1	Low	YES	District	1	7
Varanasi	279	13244	69.5	Low	YES	DDU	1	8
Kausham	275	13519	71.0	Low	No		1	2
Ghazipur	228	13747	72.2	Low	Yes	Gauraba	1	5
Jhansi	228	13975	73.4	Low	YES	CHC-	1	5
Basti	222	14197	74.5	Low	YES	District	1	7
Rampur	218	14415	75.7	Low	No		1	2
Amroha	216	14631	76.8	Low	No		1	
Hatras	214	14845	77.9	Low	YES	Sikanadr	1	4
Kannauj	213	15058	79.0	Low	YES	Kannauj	1	6
Sonbhadra	211	15269	80.2	Low	YES	District	1	2
Shaharanp	208	15477	81.2	Low	YES	District	1	6
Auraiya	206	15683	82.3	Low	No		1	2
Sultanpur	202	15885	83.4	Low	YES	On NH-	1	7
Hapur	197	16082	84.4	Low	YES	GarhMu	1	2
Amethi	182	16264	85.4	Low	No		1	5

Table: 1 Mapping of Trauma Care Facilities along with National Highways

Name of the District	Number of deaths during 2017	Cum number	Cum %	Categorization of Districts	Availability of Trauma care facilities	Place of Trauma care facilities	National Highway Passing through the District (Yes=1)	Number of CHCS on NH (0-5 KMS)
Gonda	180	16444	86.3	Low	No		1	4
Ballia	179	16623	87.3	Low	YES	District	1	7
Banda	175	16798	88.2	Low	YES	District	1	1
Sambhal	172	16970	89.1	Low	No		1	4
Maharajga	171	17141	90.0	Low	No		1	8
Pilibhit	166	17307	90.9	Low	No		1	2
Ambedkar	164	17471	91.7	Low	No		1	3
Jalaun	151	17622	92.5	Low	YES	District	1	2
Azamgarh	143	17765	93.3	Low	YES	District	1	4
Bhadohi	131	17896	93.9	Low	YES	CHC-	1	3
Mau	129	18025	94.6	Low	No		1	2
S.K.	129	18154	95.3	Low	No		1	3
Mahoba	126	18280	96.0	Low	No		1	3
Chandauli	118	18398	96.6	Low	No		1	1
Hamirpur	116	18514	97.2	Low	No		1	7
Lalitpur	107	18621	97.8	Low	YES	District	1	1
Mirzapur	107	18728	98.3	Low	YES	District	1	8
Chitrakoot	90	18818	98.8	Low	No		1	4
Siddarth	86	18904	99.2	Low	No		1	3
Balrampur	82	18986	99.7	Low	No		1	6
Shrawasti	63	19049	100.0	Low	No		1	2

Mapped CHC within 5 KM Distance from National Highways

Name of NH	District	Block	Facility
NH 75E	Sonbhadra	Dudhi	Duddhhi
NH 02	Sonbhadra	Chopan	CHOPAN
NH 07	Mirzapur	Lalganj	Lalganj
NH 26	Lalitpur	Talbehat	TALBEHAT
NH 07	Mirzapur	PAHADI (Pandri)	PADARI
NH 07	Mirzapur	Narayanpur (Chunar)	Chunar (Chacheri More)
NH 07	Mirzapur	Sikhar	Sikhar
NH 07	Mirzapur	Narayanpur (Chunar)	Chunar
NH 76 E	Mirzapur	CHHANBEY (Vijaypur)	Vijaypur
NH 76 E	Mirzapur	City (Gursundi)	VINDHYACHAL
NH 76 E	Mirzapur	Kon (Chilh)	CHILH
NH 76	Allahabad	Shankargarh	Community Health Centre
NH 76	Chitrakoot	NA	Rampur
NH 76	Chitrakoot	ChitrakootDhamKarwi	Shivrampur
NH 76	Chitrakoot	Ram Nagar	Ram Nagar
NH 02	Varanasi	NA	Jamalpur
NH 26	Jhansi	BABINA	BABINA
NH 02	Varanasi	ARAZILINES	ARAZILINES
NH 76	Chitrakoot	Mau	Mau
NH 02	Bhadohi	Aurai	Aurai
NH 02	Varanasi	PHC SEWAPURI	HANTHI
NH 27	Allahabad	Jasra	Jasra
NH 76 E	Allahabad	Karchhana	Karchhana
NH 02	Bhadohi	GYANPUR	GOPIGANJ
NH 02	Bhadohi	Deegh	Deegh
NH 02	Chandauli	Niyamtabad	Bhogwara
NH 76	Mahoba	Kulpahar	Kulpahar
NH 02	Allahabad	HANDIA	HANDIA
NH 02	Allahabad	SAIDABAD	SAIDABAD
NH 27	Allahabad	Chaka	Chaka
NH 02	Allahabad	Dhanupur	Dhanupur
NH 86	Mahoba	Kabrai	Kabrai
NH 29	Varanasi	NA	Miserpur
NH 29	Varanasi	CHIRAIGAON	NARAPATPUR
NH 76	Mahoba	Panwari	Panwari
NH 97	Ghazipur	Zamania	Zamania
NH 27	Allahabad	NA	Kendrasorawv
NH 02	Allahabad	NA	Eat Bani
NH 56	Varanasi	HARAHUA	PUWARIKALA
NH 56	Varanasi	NA	Gangapur, Mangari

Mapped CHCs within 5 KM Distance from National Highways

Name of NH	District	Block	Facility
NH 233	Varanasi	NA	Cholapur
NH 25	Jhansi	BADAGAON	BADAGAON
NH 02	Kaushambi	Mooratganj	Alamchand
NH 24B	Allahabad	Kaurihar	Kaurihar
NH 29	Ghazipur	SAIDPUR	SAIDPUR
NH 29	Ghazipur	SAIDPUR	KHANPUR
NH 232	Banda	BABERU	BABERU
NH 25	Jhansi	Chirgaon	CHIRGAON
NH 56	Jaunpur	NA	Raihti
NH 02	Hamirpur	Rath	DHAMNA
NH 02	Hamirpur	RATH	RATH URBAN
NH 233	Jaunpur	Dobhi	Dobhi
NH 02	Hamirpur	RATH	RATH
NH 29	Ghazipur	Jakhaniya	Jakhania
NH 96	Allahabad	Soraon	Soraon
NH 02	Jhansi	Gursarai	Gursarai
NH 19	Ghazipur	Mohammadabad	CHC
NH 02	Kaushambi	Sirathu	Sirathu
NH 19	Ballia	NA	FatehpurMadwan
NH 02	Hamirpur	Maudha	Muskara
NH 231	Jaunpur	MUNGRA B.PUR	SATHARIYA
NH 86	Hamirpur	Maudha	MAUDAHA
NH 96	Allahabad	MAUAIMA	HARAKHPUR
NH 231	Jaunpur	MACHHALI SHAHAR	MACHHALI SHAHAR
NH 231	Pratapgarh	NA	Kahla
NH 24B	Pratapgarh	kunda	Kunda
NH 231	Jaunpur	NA	Sikrara
NH 19	Ballia	Sohaw	Narhi
NH 231	Pratapgarh	GAURA	GAURA
NH 25	Jhansi	MOTH	MOTH
NH 02	Fatehpur	AIRAYAN	KHAGA
NH 19	Ballia	NA	Sonvarsa
NH 19	Ballia	Dubhar	Dubhar
NH 19	Ballia	NA	Dubhad
NH 19	Ballia	NA	Basudharpad
NH 231	Pratapgarh	Shivgarh	Raniganj
NH 24B	Pratapgarh	Kalakankar	KALAKANKER
NH 232	Fatehpur	Bahua	Gajipur
NH 56	Jaunpur	BUXA	NAUPERWA BUXA
NH 24B	Pratapgarh	NA	Chandrika
NH 19	Ballia	Belahari	Sonwani
NH 02	Hamirpur	Sarila	Sarila
NH 231	Pratapgarh	Laxmanpur	AjgaraRaniganj

Name of NH	District	Block	Facility
NH 231	Pratapgarh	NA	Vardaita
NH 56	Jaunpur	BADLAPUR	BADLAPUR
NH 24B	Raibareli	Unchahar	CHC Unchahar
NH 86	Hamirpur	NA	Noranga
NH 96	Pratapgarh	NA	Mandah
NH 232	Fatehpur	BHITAURA	Husainganj
NH 25	Jalaun	NA	Dakor
NH 233	Azamgarh	NA	Rani Kai Sarai
NH 231	Raibareli	Salon	CHC SALON
NH 233	Azamgarh	RANI KI SARAI	BADYA
NH 29	Mau	Kopaganj	Kopaganj
NH 96	Pratapgarh	Mangraura	KOHANDAUR
NH 24B	Raibareli	Jagatpur	CHC Jagatpur
NH 232A	Raibareli	Dalmau	CHC Dalmau
NH 56	Sultanpur	P.P.Kamaicha	Pratap PurKamaicha
NH 86	Kanpur Nagar	Shivrajpur	Shivrajpur
NH 25	Jalaun	NA	Kalpi
NH 29	Mau	NA	Ghosi
NH 24B	Raibareli	RAHI	CHC BelaBhela
NH 56	Sultanpur	Lambhua	Lambhua
NH 86	Kanpur Nagar	GHATAMPUR	GHATAMPUR
NH 232A	Raibareli	LALGANJ	CHC LALGANJ
NH 56	Sultanpur	Bhadaiyan	Bhadaiyan
NH 232	Amethi	Gauriganj	Gauriganj
NH 232	Amethi	Bhetua	Bhetua
NH 25	Kanpur Dehat	AMRAUDHA	PUKHRAYAN
NH 56	Sultanpur	NA	Dubaipur
NH 56	Sultanpur	NA	Karodikala
NH 233	Azamgarh	KOILSA	KOILSA
NH 56	Sultanpur	Dubeypur	Hasanpur
NH 25	Kanpur Dehat	Malasa	Devipur
NH 233A	Raibareli	Amawan	CHC Amawan
NH 29	Gorakhpur	Derwa	Barhalganj
NH 232A	Unnao	Sumerpur	Patan
NH 86	Kanpur Nagar	KAKWAN	KAKWAN
NH 233	Azamgarh	Atraulia	Atraulia
NH 24B	Raibareli	HARCHANDPUR	CHC HARCHANDPUR
NH 56	Amethi	Musafirkhana	Musafirkhana
NH 02	Kanpur Dehat	NA	Shikendra

Mapped CHCs within 5 KM Distance from National Highways

Name of NH	District	Block	Facility
NH 02	Kanpur Dehat	Akbarpur	Akbarpur
NH 232A	Unnao	Bighapur	Magrayar
NH 233A	Amethi	Tiloi	Tiloi
NH 96	Sultanpur	Kurebhar	Kurebhar
NH 232A	Unnao	S.Karan (Achalganj)	Achalganj
NH 232	Ambedkar Nagar	Akabarpur	Akabarpur
NH 56	Amethi	Jagdishpur	Jagdishpur
NH 233	Ambedkar Nagar	Baskhari	Baskhari
NH 24B	Raibareli	Bachhrawan	CHC Bachhrawan
NH 233	Ambedkar Nagar	Tanda	Tanda
NH 02	Auraiya	Ajitmal	Ajitmal
NH 96	Faizabad	Bikapur	Bikapur
NH 25	Unnao	Nawabganj	Nawabganj
NH 233A	Faizabad	Milkipur	Milkipur
NH 02	Etawah	Mahewa	Mahewa
NH 56	Barabanki	Trivediganj	Trivediganj
NH 91	Kanpur Nagar	Chaubeypur	Chaubeypur
NH 56 B	Lucknow	Mohanlalganj	CHC Mohanlalganj
NH 28B	Kushinagar	Na	Fajilnagar
NH 92	Etawah	Badpura	Udi
NH 28	Faizabad	Masaudha	Masaudha
NH 28	Faizabad	Mawai	Mawai
NH 28	Gorakhpur	Na	Basudeha
NH 25	Lucknow	Sarojni Nagar	Sarojini Nagar
NH 28	Gorakhpur	Na	Arawjagdish
NH 28	Faizabad	Sohawal	Sohawal
NH 28	Basti	Bastisadar	Bastisadar
NH 56	Lucknow	Gosaiganj	Gosaiganj
NH 28	Faizabad	Na	Eat Khairanpur
NH 28	Gorakhpur	Sahjanwa	Sahjanwa
NH 28	Faizabad	Na	Kaindmawai
NH 28	Faizabad	Rudouli	Rudouli
NH 91A	Etawah	Bharthana	Bharthana
NH 91	Kanpur Nagar	Kalyanpur	Kalyanpur
NH 28	Gorakhpur	Na	Gangha
NH 28	Barabanki	Haidergarh	Haidergarh
NH 28	Basti	Bankati	Bankati
NH 28	S.K. Nagar	Khalilbad	Khalilabad
NH 28	Barabanki	Banikoder	R S Ghat

Mapped CHCs within 5 KM Distance from National Highways

Name of NH	District	Block	Facility
NH 28	Basti	Harraiya	Harraiya
NH 28	Basti	Vikramjot	Vikramjot
NH 91A	Auraiya	bidhuna	Bidhuna
NH 24A (Lucknow bypass	Lucknow	UCHC	UCHC
NH 28B	Kushinagar	NA	Kubernath
NH 56 A	Barabanki	Banki	Jatabarauli
NH 24A (Lucknow bypass	Lucknow	UCHC AISHBAGH	UCHC Aishbagh
NH 24A (Lucknow bypass	Lucknow	Toodiaganj	BMC Turiyaganj
NH 92	Etawah	Basreher	Basrehar
NH 28	Basti	Saughat	Saughat
NH 24A (Lucknow bypass	Lucknow	CHINHAT	Chinhat 1
NH 28	Barabanki	HARAKH	Satrik
NH 24A (Lucknow bypass	Lucknow	Indira Nagar	UCHC Indira Nagar
NH 24A (Lucknow bypass	Lucknow	Aliganj	UCHC-Aliganj, LKO
NH 29 E	Gorakhpur	NA	Jangalkodeya
NH 02	Etawah	Jaswant Nagar	Jaswant Nagar
NH 730	S.K. Nagar	Semariwan	Semariyawan
NH 730	Kushinagar	RAMKOLA	CHC Ramkola
NH 03	Agra	Saiyan	Saiyan
NH 730	Kushinagar	KAPTANGANJ	Kaptanganj
NH 91A	Kannauj	Umarda	Frokz
NH 92	Etawah	Saifai	Saifai
NH 92	Etawah	Takha	SarsaiNawar
NH 28A	Barabanki	Masauli	Badagawan
NH 730	S.K. Nagar	Mehdawal	Mehdawal
NH 730	Maharajganj	Partawal	Partawal
NH 730	Maharajganj	Paniyara	Mansoorganj
NH 24	Lucknow	BakshiKaTalab	CHC-BKT
NH 92	Mainpuri	Karhal	Karhal
NH 29 E	Gorakhpur	Campierganj	Campierganj New Wing
NH 92	Mainpuri	NA	Kisni
NH 730	Basti	Ramnagar	Ramnagar
NH 29 E	Gorakhpur	Campierganj	Campierganj
NH 233	Basti	Rudhauri	Rudhauri
NH 91	Kannauj	NA	Kannauj
NH 02	Firozabad	Madanpur	Sirsaganj
NH 24	Lucknow	BakshiKaTalab	CHC Itaunja
NH 28B	Kushinagar	NEBUA	NEBUA NAURANGIA
NH 91	Kannauj	Jalalabad	Jalalabad

Mapped CHCs within 5 KM Distance from National Highways

Name of NH	District	Block	Facility
NH 91	Kannauj	Talgram	Gurshaiganj
NH 28A	Gonda	Colonelganj	Colonelganj
NH 28 C	Baharich	Jarwal	Mustafabad
NH 91	Kannauj	Gugrapur	Gugrapur
NH 28A	Gonda	Haldharmau	Haldharmau
NH 29 E	Maharajganj	Pharenda	Pharenda
NH 29 E	Maharajganj	NA	Eat Bankati
NH 730	Siddarth Nagar	Dumariaganj	Bewa
NH 91	Kannauj	Chhibramau	Chhibramau
NH 92	Mainpuri	Mainpuri Rural	Kuchela
NH 02	Firozabad	NA	Didamai
NH 233	Siddarth Nagar	Bansi	Basantpur
NH 11	Agra	Bichpuri	Bichpuri
NH 233	Maharajganj	Brijmanganj	Brijmanganj
NH 28A	Gonda	Pandrikripal	Pandrikripal
NH 11	Agra	NA	Awalkheda
NH 233	Siddarth Nagar	Uska Bazar	Uska Bazar
NH 11	Agra	Achnera	Achnera
NH 233	Maharajganj	NA	Eat Chainpur
NH 92	Mainpuri	Bewar	Bewar
NH 02	Firozabad	Tundla	Tundla
NH 02	Agra	Etmadpur	Etmadpur
NH 730	Balrampur	GaindasBujurg	GaindasBujurg
NH 29 E	Maharajganj	Laxmipur	Laxmipur
NH 24	Sitapur	Sidhauri	Sidhauri
NH 28A	Gonda	Itiyathok	Itiyathok
NH 730	Balrampur	Utrala	Utrala
NH 28 C	Baharich	Visheshwarganj	Visheshwarganj
NH 730	Balrampur	Siduttganj	Sriduttganj
NH 91	Mainpuri	Kurawali	Kurawali
NH 28 C	Baharich	Fakharpur	Fakharpur
NH 02	Mathura	Baldeo	Baldeo
NH 29 E	Maharajganj	Nautanwa	Nautanwa
NH 93	Hatras	NA	Sadabad
NH 24	Sitapur	Khairabad	Khairabad
NH 28A	Balrampur	Pachperwa	Pachperwa
NH 730	Shrawasti	Ikauna	Ikauna
NH 28A	Balrampur	Tulsipur	Tulsipur
NH 28A	Balrampur	Gainsari	Gainsari
NH 730	Shrawasti	Gilaula	Gilaula
NH 93	Hatras	Moorsan	Mursan

Mapped CHCs within 5 KM Distance from National Highways

Name of NH	District	Block	Facility
NH 24	Sitapur	Maholi	Maholi
NH 02	Mathura	mant	mant
NH 91	Hatras	NA	SikandraRao
NH 93	Hatras	Sasni	Sasni
NH 24	Lakhimpur	Passawan	Pasguwan
NH 91	Aligarh	Akrabad	Akrabad
NH 24	Shahjahanpur	Dadrour	Dadrour
NH 730	Lakhimpur	Issanagar	Khamariya
NH 730	Lakhimpur	Nakaha	Nakaha
NH 28 C	Baharich	Nawabganj	Charda
NH 24	Shahjahanpur	Tilhar	Tilhar
NH 730	Lakhimpur	Lakhim Pur Kheri (Phardhan)	Phardhan
NH 730	Baharich	Mihinpurwa	Motipur
NH 24	Shahjahanpur	khudaganj	Meeranpurkatra
NH 93	Aligarh	Jawan	Jawan
NH 91	Aligarh	Chandaus	Gabhana
NH 02	Aligarh	Tappal	Tappal
NH 93	Aligarh	Atrauli	Atrauli
NH 91	Bulandshahar	NA	Muni
NH 730	Lakhimpur	Bankeyganj	Bankeyganj
NH 730	Shahjahanpur	Khutar	Khutar
NH 24	Bareilly	Faridpur	Faridpur
NH 93	Bulandshahar	Danpur	Danpur
NH 93	Bulandshahar	NA	Dhebai
NH 93	Sambhal	Gunnaur	Gunnaur
NH 93	Sambhal	Bahjoi	Bahjoi
NH 93	Sambhal	Baniyakheda	Chandausi
NH 93	Sambhal	Baniyakheda	Narouli
NH 730	Pilibhit	Puranpur	Puranpur
NH 91	G.B. Nagar	Dadri	Dadri
NH 235	Bulandshahar	Gulawathi	Gulawathi
NH 24	Rampur	Milak	Milak
NH 74	Pilibhit	Lalaurikhera	Jahanabad
NH 93	Moradabad	Bilari	Main Center Bilari
NH 24	Ghaziabad	Rajapur	Dasna
NH 24	Hapur	Hapur	Hapur
NH 74	Bareilly	Baheri	Baheri

Mapped CHCs within 5 KM Distance from National Highways

Name of NH	District	Block	Facility
NH 24	Hapur	Garh	Garh
NH 24	Moradabad	NA	Mudhapandey
NH 58	Ghaziabad	Muradnagar	CHC Muradnagar
NH 235	Meerut	NA	Kharkhoda
NH 58	Ghaziabad	Rajapur	Modinagar
NH 58	Meerut	Bhoodbaral	Bhoodbaral
NH 119	Meerut	NA	Parishitpur
NH 86	Rampur	Swar	Swar
NH 119	Meerut	Mawana	Mawana
NH 58	Meerut	Daurala	Daurala
NH 74	Moradabad	Thakurdwara	Patti Jaat
NH 58	Muzaffarnagar	NA	Khatoli
NH 74	Bijnor	Dhampur	Dhampur
NH 74	Bijnor	Kotwali	Nagina
NH 119	Bijnor	Kiratpur	Kiratpur
NH 119	Bijnor	Najibabad	Najibabad
NH 58	Muzaffarnagar	Purkazi	Pholoda
NH 59	Shaharanpur	Deoband	Deoband
NH 59	Shaharanpur	NA	Nagal
NH 59	Shaharanpur	Baliakheri	SunehtiKharkhari
NH 73	Shaharanpur	Punwarka	Harora
NH 73	Shaharanpur	Sarsawa	Sarsawa
NH 59	Shaharanpur	Muzaffarabad	Fatehpur Bhado

Proposed Human Resources, Infrastructure and Equipments at Divisional level District Hospitals, District Hospitals and CHCs (Basic Trauma Care Units)

S.No.	Items	Divisional Level District Hospitals (L2)	District Hospitals (L3)	CHC (Basic Trauma Care Facility)
Infrastructure				
1.	ICU Beds	10	5	2
2.	OT	2	1	1
Equipments				
Radiology equipment's				
1.	Image intensifier (C-Arm)	1	1	-
2.	3-D Ultrasonography - Trolley	1	-	-
3.	Ultrasonography - Trolley based		1	1
4.	500 mA X-ray Machine with CR System and camera for both X Ray machine	1	1	-
5.	100 mA portable X-ray Machine with CR System and camera for both X- ray machine	1	1	1
6.	CT Scan-16 or more slice	1	1	-
Rehabilitative equipments				
7.	SW Diathermy	1	-	-
8.	IFT machine	1	-	-
9.	Cervical traction & Lumbar	1	-	-
10.	Physiotherapy Equipments	1	1	-
Anaesthesia Equipments				
11.	O.T. Table - 4 segments,	2	-	-
12.	O.T. Table - 3 segments,	-	2	1
13.	Cautery machine - mono & bipolar	2	2	-
14.	O.T ceiling light - shadow less	2	2	1
15.	Central suction & central pipe line	1	1	-
16.	High vacuum suction machine	2	-	-
17.	Suction Machine	-	4	2
18.	Anaesthesia machine with monitor 6-8 channel (Parameters: Agent monitoring, NIBP, SPO2, ET CO2, ECG, Temp., IBP)	2	-	-
19.	Anaesthesia machine with monitor Parameters: Agent monitoring, NIBP, SPO2, ET CO2, ECG, Temp., IBP)	-	2	1
20.	Transport ventilator	1	1	1
21.	Ventilator with high end compressor	10	5	1

S.No.	Items	Divisional Level District Hospitals (L2)	District Hospitals (L3)	CHC (Basic Trauma Care Facility)
22.	ABG Machine-Hand held analyzer	-	1	-
23.	Defibrillator with monitor (Parameters: NIBP, ECG, SPO2 with AED)	10	5	-
24.	Monitor (Large screen with ECG, SPO2, NIBP,ATCo2)	10	5	-
25.	Operating Microscope	1	-	-
25.	Operating head lights	2	-	-
26.	Manifold system in ICU	1	-	-
27.	Patient warming system	1	-	-
28.	Syringe infusion pump	3	1	-
	Orthopaedic Equipments			
29.	Pneumatic tourniquet	2	2	-
30.	Power drill & power saw	1	1	-
31.	Splints & traction devices	2	-	-
32.	General orthopaedic instrument	2	1	1
	OT Equipments			
33.	General surgical instrument	2	2	1
34.	Thoracotomy instrument	1	-	-
35.	Spinal surgery instrument	1	-	-
36.	Craniotomy instrument	2	1	-
37.	Humidity control meter	1	1	1
	Other Facilities			
38.	Blood bank & Microbiology	1	-	-
39.	Electricity back up	1	1	
40.	Laminar air flow	1	-	-
41.	5 bedded step down/recovery	1	1	-
	Human Resources			
1.	Neuro Surgeon	1	-	-
2.	Radiologist	2	2	-
3.	Anaesthetist	3	2	1
4.	Orthopaedic Surgeon	3	2	1
5.	General Surgeon	2	2	1
6.	Casualty Medical Officer	8	6	-
7.	Staff Nurse	40	25	-
8.	Nursing attendant	16	13	-
9.	OT Technician	5	5	2
10.	Radiographer	4	4	1
11.	Lab Technician	2	2	1
12.	Multi task worker	15	12	-

Source: Operational guidelines government of India for “Capacity Building for Developing Trauma Care Facilities on National Highways”



Uttar Pradesh Health Systems Strengthening Project (UPHSSP)
SIHFW- C - BLOCK, Indira Nagar Colony,
Lucknow, Uttar Pradesh 226016