6. Emergency Medical Service - Economy

India's emergency medical response system remains inadequate despite progress in technology and fleet expansion, with issues in response time, standardization, and training. The government aims to strengthen services through AIS-125 standards, NHM support, and the 112-emergency number system.

Ambulance Services and Emergency Medical Response in India

Context

Acute illnesses and trauma can trigger sudden physiological disturbances that may quickly become fatal. Prompt diagnosis and immediate intervention can reverse these changes, saving lives. Hence, emergency medical response should be viewed as a constitutional duty of the State, not merely a service.

Current Status of Ambulance Services in India

1. National Ambulance Fleet (as of June 2024) -

Basic Life Support (BLS) - 15,283 units
Advanced Life Support (ALS) - 3,044 units
Patient Transport Vehicles - 3,918 units

Total - Around 22,245 ambulances deployed under the National Health Mission (NHM).

2. Market Size and Growth -

2024 Market Value - USD 1.67 billion
Projected 2030 Value - USD 2.21 billion
Compound Annual Growth Rate (CAGR 2025–2030) - 7.5%

3. Average Response Times -

Location	Average Response Time
National Average	22 minutes
Chennai	5 minutes 4 seconds
Trichy	4 minutes 48 seconds (as of May 2025)

4. Technological Advancements - Implementation of real-time GPS tracking and automated dispatch systems in states like Tamil Nadu. These advancements have reduced response times and improved dispatch efficiency.

5. Regulatory Standards

The National Ambulance Code (AIS-125) defines uniform standards for -

1. Ambulance design and safety,
2. Equipment requirements, and
3. Operational protocols.

Evolution of Ambulance Services

Era / Period	Key Developments	Impact on Emergency Care
Ancient & Medieval Times	Basic transport for injured soldiers to healers	Early concept of medical evacuation; minimal care
Industrial Revolution (18th–19th c.)	Introduction of motor vehicles for medical transport	Quicker patient movement; early medical equipment onboard
World Wars / Korean / Vietnam Wars	Triage, battlefield resuscitation, and evacuation	Foundation of modern trauma medicine and emergency protocols
Mid-20th Century	Oxygen cylinders, IV fluids, and first-aid kits in ambulances	Basic life support became available during transport
Golden Hour Concept (1960s–70s)	Emphasis on treatment within first hour post-trauma	Reduced mortality; increased survival through rapid transfer
Platinum Ten Minutes (21st Century)	Defibrillators, ECG/ECHO, mobile CT, advanced life support	Life-saving interventions initiated within 10 minutes
Modern Integration (Present)	GPS-enabled dispatch, air/drones, live hospital monitoring	Seamless care coordination even in remote areas

Key Challenges in India

1. **Response Time -** National average - 22 minutes, which is above the optimal global standard (10–15 minutes). Some states (e.g., Tamil Nadu) perform better, averaging ~10 minutes, but rural regions face significant delays.
2. **Fleet Size and Distribution - ~**22,245 ambulances for a population of 1.4 billion is inadequate. Rural and underserved areas face critical shortages.
3. **Standardization and Equipment -** Many private ambulances do not comply with AIS-125 norms. Lack of standardized life-saving equipment and trained personnel results in quality disparity.
4. **Staffing and Training -** High attrition among paramedics and shortage of certified staff. Limited availability of trained personnel in rural zones.
5. **Technological and Infrastructure Gaps -** Limited GPS dispatch systems, lack of integration with hospitals. Air and drone ambulances are underdeveloped.
6. **Legal and Traffic Challenges -** Lack of enforced right-of-way for ambulances. Frequent traffic congestion and road accidents during transit hinder response efficiency.

Key Concepts

1. Golden Hour - The first hour after a traumatic injury is crucial. Prompt medical care during this period significantly improves survival rates for conditions like trauma, heart attacks, and strokes.

2. Platinum Ten Minutes - Modern emergency care goal - initiate life-saving treatment within 10 minutes of an incident. Focuses on rapid assessment, stabilization, and evacuation.

Constitutional and Legal Obligation

1. Right to Life (Article 21) - Access to timely and effective emergency medical care is part of the right to life.

2. State Responsibility

The State must ensure

1. Adequate ambulance availability and deployment.
2. Unobstructed emergency routes.
3. Trained medical staff and standardized equipment.

3. Legal & Ethical Duty - Emergency response is not merely a service, but a constitutional and ethical obligation. Denial or delay in emergency response violates Article 21.

Government Measures

1. Nationwide Emergency Response System (NERS) - Unified emergency number 112 for all services (police, fire, medical). Integrated with GPS tracking and digital response systems.

2. Disaster Management and Health Emergency Operations - The National Disaster Management Authority (NDMA) coordinates health emergency responses. Ensures hospital safety, disaster readiness, and real-time emergency centers.

3. National Ambulance Code (AIS-125) - Standardizes ambulance design, medical equipment, and operational norms. Promotes uniform quality of emergency care across India.

4. National Health Mission (NHM) Support - Provides funding for ambulance procurement, training, and life support systems. Around 22,245 ambulances deployed under NHM by 2024.

5. State-Level Initiatives - States like Tamil Nadu have introduced real-time ambulance tracking, automated dispatch, and dedicated emergency authorities.

6. Legal and Regulatory Frameworks

Motor Vehicles Act, 1988 (amended 2019) - Grants ambulances right of way.

Civil Defence Preparedness - Training volunteers and communities for first response.

Way Forward

1. **Uniform Standardization -** Enforce AIS-125 compliance for all public and private ambulances.
2. **Expand Fleet and Accessibility -** Increase ambulance-to-population ratio; prioritize rural and hilly areas.
3. **Strengthen Response Systems -** Deploy GPS-enabled call centers for real-time tracking and coordination.

4. **Human Resource Development -** Establish paramedic certification programs and mandatory refresher training.
5. **Legal and Policy Reforms -**Strictly enforce right-of-way laws for emergency vehicles. Penalize unauthorized use of ambulance routes or sirens.
6. **Technology Integration -** Promote AI-based dispatch, drone ambulances, and remote monitoring systems.
7. **Public Awareness -** Conduct campaigns to educate citizens about yielding to ambulances and first-aid basics.

Source - https - //www.thehindu.com/sci-tech/health/why-emergency-care-needs-to-be-prioritised/article70182265.ece