

# GOING BEYOND PATIENT TRANSFER

India needs a clear push towards Advanced Life Support Ambulances



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# INTRODUCTION

Ambulances constitute a diverse array of vehicles and services, each meticulously designed to cater to a specific medical exigency. The variety of ambulances available reflects the diverse range of emergency medical services, highlighting the crucial need for specialized interventions to address the varying medical needs of patients in different situations.

The COVID-19 pandemic starkly highlighted the longstanding inadequacies in healthcare systems worldwide, a reality not confined to India alone. The scarcity of ambulances, vividly evident on the streets of India during the crisis, underscored the strain faced by healthcare infrastructure in meeting the surge in demand for critical services. Instances of patients being transported in personal vehicles, auto-rickshaws, and other unconventional means served as poignant reminders of the systemic challenges exacerbated by the pandemic.

Now, two years post the harrowing onslaught of the second wave, substantial transformation remains elusive, prompting a critical interrogation of our preparedness to confront future pandemics.



The persisting deficiencies in healthcare provisioning, underscored by the enduring shortage of ambulances, raise pertinent questions about our collective readiness to withstand and effectively mitigate the impact of future health crises.

As we reflect on the lessons gleaned from the COVID-19 pandemic, the imperative to fortify healthcare systems and prioritize robust emergency response mechanisms assumes paramount significance.

# EXISTING TYPES OF AMBULANCES

## BASIS FUNCTIONALITY

### BASIC LIFE SUPPORT AMBULANCE

Primarily, the Basic Life Support Ambulance (BLS) stands as the frontline responder equipped with indispensable medical apparatus and manned by proficient personnel adept at administering immediate care. Within the realm of BLS, interventions encompass vital life-saving measures, including Cardio-Pulmonary Resuscitation (CPR), oxygen therapy, and rudimentary wound management.

### ADVANCED LIFE SUPPORT AMBULANCE

In contrast, the Advanced Life Support Ambulance (ALS) operates at a heightened level, delving beyond fundamental care to offer sophisticated medical interventions. ALS units are furnished with advanced cardiac monitoring systems, defibrillators, and ventilators, alongside a cadre of highly trained paramedics capable of executing intricate medical procedures under duress.

Additionally, the scope of providing care as a first responder extends to specialized ambulances, tailored for specific situations. **The Air Ambulance**, for instance, is a crucial asset for expedited transport across vast distances, leveraging advanced medical equipment and with a specialized medical team to ensure swift and efficient patient transfer. Meanwhile, **Non-Emergency Patient Transport Ambulances** cater to the needs of patients requiring medical transportation, but not necessitating urgent care, facilitating safe and comfortable transits for individuals with chronic ailments or disabilities.

Moreover, the spectrum encompasses unique modalities such as **Boat Ambulances**, strategically deployed in areas inaccessible by conventional land vehicles, thereby ensuring medical assistance reaches remote or water-locked regions. **Intensive Care Unit (ICU) Ambulances** represent a pinnacle in mobile medical care, equipped with state-of-the-art intensive care facilities and staffed by a multidisciplinary team capable of managing critical patients during transit. Lastly, **Dead Body Ambulances** fulfil the solemn duty of dignified transportation post-mortem, serving to respectfully convey deceased individuals while upholding cultural and regulatory protocols.



# TRENDS IN INDIAN AMBULANCE MARKET AND THE DISCREPANCIES



The patient outcome depends significantly on the first response and treatment provided in the initial minutes. Currently, most Indian ambulances focus more on 'patient transfer' rather than 'critical emergency care.' India not only requires more ambulances to meet current demands but also needs to upgrade existing ones.

**Mr. Anurag Singh,**  
MD Primus Partners



India has undoubtedly witnessed significant strides in the provision of ambulance services over the past decade. However, the question looms large as to whether these advancements suffice in meeting the exigencies posed by potential future pandemics or adequately address the imperative of reducing trauma-related mortality within the critical "golden hour" timeframe. Regrettably, the answer to these pressing queries appears to lean towards the negative.



India Ambulance Services market in 2022 stood at USD1502.78 million which is expected to grow at a rate of **5.12% CAGR during the forecast period 2024-2028<sup>[1]</sup>**.

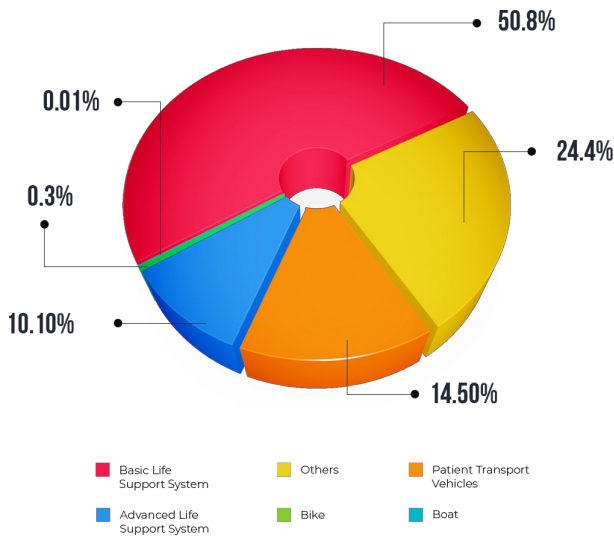
**17,495**

According to data from the National Health Mission as of December 31, 2023<sup>[2]</sup>, the tally of ambulances operational in various States/Union Territories, including those under NHM and those other than NHM, stands at 17,495.

**3,441**

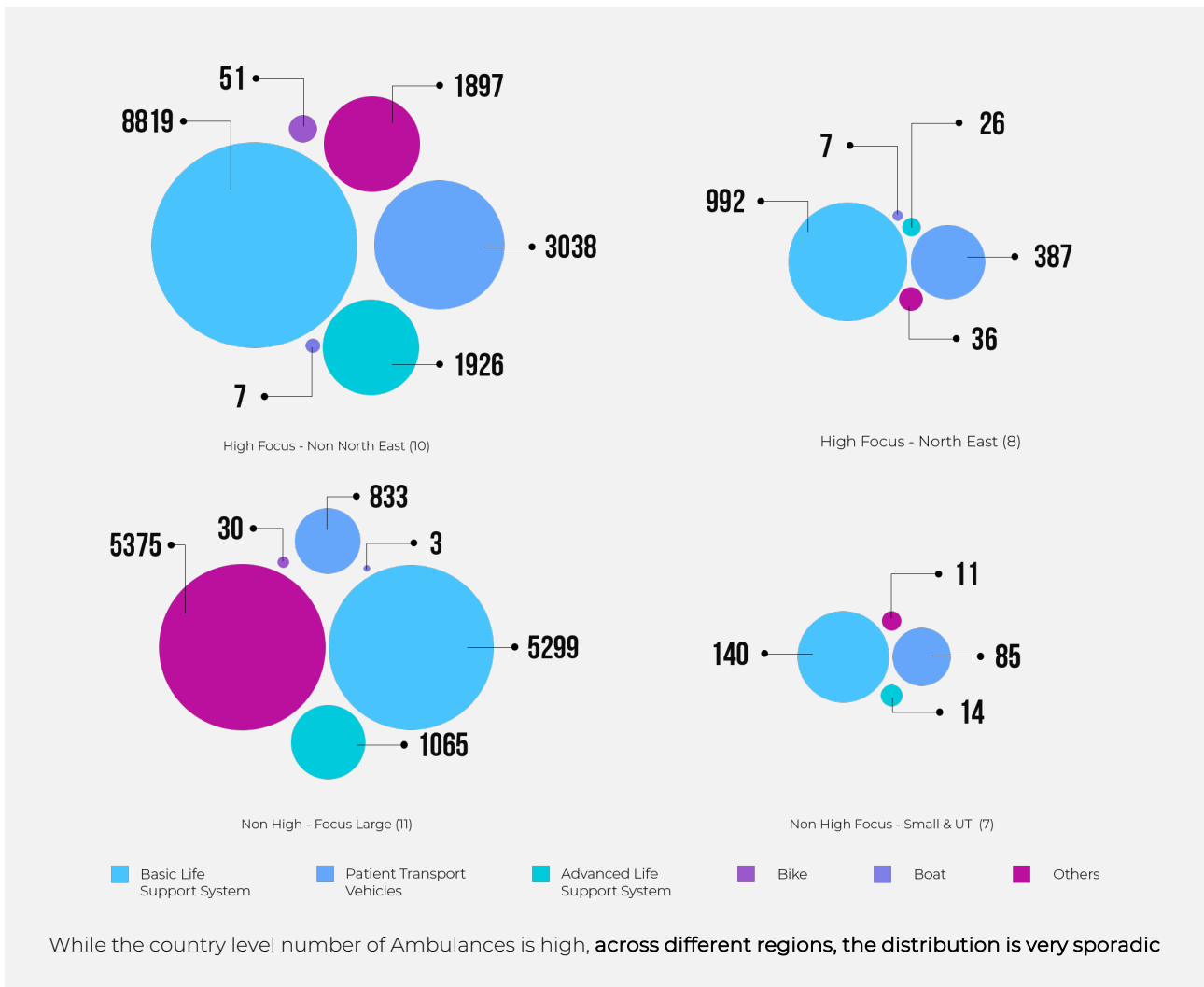
The count for the Advanced Life Support (ALS) ambulances stands at 3,441. Disturbingly, this data also reveals a glaring gap in the availability of ALS ambulances (under NHM), particularly in high-focus regions such as the Northeastern States, where a mere 26 ALS ambulances are reported to be in service.

[1] India Ambulance Services Market, By Transport Vehicle (Ground v/s Air), By Services (Emergency v/s Non-Emergency), By Service Operators, By Equipment Type, By Company, By Region, Forecast & Opportunities, 2028F  
[2] <https://nhm.gov.in/New-Update-2023-24/NHM-MIS/Dec-2023/Executive-Summary.pdf>



The Patient transport vehicles, take a larger share of the currently available ambulances, this needs to shift towards the Advanced Life Support Ambulances, which are equipped to save lives.

Number of ERS vehicles operational in the States/UTs Under NHM



While the country level number of Ambulances is high, across different regions, the distribution is very sporadic

Number of ERS vehicles operational in the States/UTs Under NHM



It's crucial to acknowledge that the actual operational capacity of these ambulances may be compromised due to various factors such as **maintenance issues, aging of vehicles, and other logistical constraints.**

Consequently, while commendable progress has been made in augmenting the fleet of ambulances nationwide, the stark realities of inadequate numbers, especially in critical care domains, accentuate the pressing need for sustained investment and strategic planning to bolster emergency medical services. Failure to address these deficiencies may severely impede the healthcare system's ability to effectively respond to future crises and ensure timely access to life-saving interventions for those in need.

The data from the last three years, sourced from Vahan Data<sup>[3]</sup>, presents a revealing narrative regarding ambulance registrations in India.

**14,236**

Over the period of 2020 - 2023, an average of 11,648 ambulance registrations annually has been recorded. The year 2020 marked a notable starting point with 7,814 registrations, followed by a significant upsurge in 2021, reaching a peak of 14,236 registrations.

This spike can be reasonably attributed to the onslaught of the second wave of the COVID-19 pandemic, which necessitated an urgent expansion of healthcare infrastructure, including ambulance services.

However, subsequent years witnessed a discernible decline in registrations, with 12,737 recorded in 2022 and a further dip to 11,950 in 2023. This downward trajectory in registrations serves as a sobering indicator of how swiftly our attention shifts away from healthcare imperatives, often in the aftermath of acute crises such as pandemics.

This trend underscores the critical need for sustained vigilance and investment in bolstering emergency medical services to ensure readiness for future adversities. Moreover, it emphasizes the imperative of enhancing efforts to reduce the duration of the "golden hour," the crucial window of time following traumatic injury or medical emergency, during which prompt medical intervention can significantly improve outcomes. Ensuring lives are saved within the crucial first hour after an emergency is not just about medical skills; it also hinges on community awareness and involvement. Educational efforts that stress the significance of quickly identifying emergencies, promptly contacting emergency services, and administering basic life-saving techniques enable people to play an active role in saving lives.

[3] <https://vahan.parivahan.gov.in/vahan-4dashboard/>

Dr. Devi Shetty, the Founder of Narayana Health, emphasized the pivotal role of awareness among people, which significantly impacts outcomes. With brain stroke ranking as the second leading cause of death globally, following heart attacks, the statistics underscore its severity. In 2020, one in six deaths related to cardiovascular disease (CVD) resulted from stroke, affecting millions annually, with millions succumbing to death or permanent disability<sup>[4]</sup>.

In essence, the fluctuating pattern of ambulance registrations over the past three years serves as a poignant reminder of the importance of maintaining a steadfast commitment to healthcare preparedness and resilience, irrespective of transient exigencies. Failure to sustain momentum in this regard risks compromising our ability to effectively respond to future challenges and uphold the fundamental right to timely and quality healthcare for all.

**1 BLS PER LAKH  
+  
1 ALS PER 5 LAKH**

AMBULANCES

The Ministry of Health and Family Welfare's announcement<sup>[5]</sup> last year regarding the government's objective of ensuring one Basic Life Support (BLS) ambulance per one lakh population, along with an average of one Advanced Life Support (ALS) ambulance per 5 lakhs population, underscored a critical milestone in healthcare provisioning. However, despite these targets, disparities persist between stated objectives and on-ground realities.

While the National Health Mission (NHM) separately provides data indicating the presence of 4,343 Patient Transport Vehicles (PTVs), discussions with frontline operators often reveal that many BLS ambulances lack the requisite equipment and trained personnel, functioning primarily as PTVs. This discrepancy highlights a substantial gap between the reported numbers and the actual fulfilment of essential ambulance services, exacerbating the healthcare deficit.



<sup>[4]</sup><https://www.dailypioneer.com/2024/columnists/the-golden-hour-timely-response-in-medical-emergencies.html>  
<sup>[5]</sup><https://www.thehindu.com/news/national/tamil-nadu/country-aims-at-having-1-ambulance-per-a-lakh-population-says-union-minister/article67634873.ece>

# THE NEED FOR INTERNATIONAL BENCHMARKING

Study on Strengthening the Capacity of Emergency Medical Services in Low- and Middle-Income Countries (LMICs), conducted on September 1, 2020<sup>[6]</sup>, shed light on internationally recommended standards. The study advocates for one ambulance per every 50,000 people in LMICs, emphasizing the critical need for robust emergency medical infrastructure, particularly in regions grappling with high rates of road traffic fatalities.

<p><b>18.9</b> <b>PER 100,000</b></p> <p><b>FATALITY RATE</b></p>	<p>India, with a road traffic fatality rate of 18.9 per 100,000 population, significantly surpasses the global average of high-income countries, which stands at 8.7. Alarming, the study underscores that severely injured road crash victims in India face heightened mortality risks compared to their counterparts in countries with well-established trauma care centres. This grim reality underscores the urgency of addressing deficiencies in emergency medical services, particularly within the critical "Golden Hour" - the first 60 minutes following a traumatic injury, where timely intervention is pivotal in saving lives.</p>
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Shockingly, nearly 80% of patients in India fail to receive timely medical attention within this crucial timeframe, signifying a systemic failure that demands immediate and decisive corrective measures. The imperative for a definitive course correction in healthcare provisioning cannot be overstated, necessitating concerted efforts to bridge the chasm between existing infrastructure and the pressing healthcare needs of the populace. Failure to heed these warnings risks perpetuating avoidable loss of life and compromising the fundamental right to quality healthcare for all.

As India undergoes rapid development, marked by the proliferation of high-speed expressways and the expansion of national and state highways, the need for a robust and interconnected ambulance network becomes increasingly imperative. These infrastructure developments, alongside the presence of extensive construction sites, underscore the critical importance of an agile emergency medical response system. Moreover, the dire warning issued by **Dr. Tedros Adhanom Ghebreyesus, Director-General of the World Health Organization (WHO)**, serves as a sobering reminder of the urgent need to fortify healthcare infrastructure in anticipation of future pandemics, potentially even deadlier than COVID-19.



The ambulance market has been shifting towards O&M model, where private players are largely providing for the existing gaps. There is scope for additional private players to bridge the gap. Also, there still exists a huge gap for ALS ambulances, which should be the focus going forward coupled with technology, to facilitate tele-medicine and other high-tech innovations. We must be prepared for any future pandemic or health emergency.

**Mr. Anshul Saxena**  
**CEO, BAXY Enviro**



[6] <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6297583/>



# KEY RECOMMENDATIONS TO ADDRESS THE GAPS

Considering these exigencies, several key steps can be taken to bolster India's ambulance network and enhance emergency medical services:

## 1. GOVERNMENT FINANCIAL SUPPORT

### ACTION ITEMS



Conduct a needs assessment to determine the specific number of BLS and ALS ambulances required in each state/UT based on population density, geography, and emergency case volume.



Allocate dedicated budget lines within the healthcare budget for ambulance procurement, maintenance, and personnel training.



Explore public-private partnerships (PPPs) where private companies invest in ambulance fleets in exchange for tax breaks or operational subsidies.

### EXAMPLE



The state of Tamil Nadu successfully implemented a PPP model for ambulance services, leading to a significant increase in ambulance availability<sup>[7]</sup>.

<sup>[7]</sup> <https://nhm.gov.in/images/pdf/communitisation/task-group-reports/draft-report-ppp.pdf>

## 2. MAXIMIZING PRIVATE SECTOR PARTICIPATION

### ACTION ITEMS



Develop standardized guidelines for private ambulance operators covering vehicle specifications, equipment requirements, personnel qualifications, and response times.



Establish a regulatory framework to ensure fair pricing and quality service provision by private operators.



Encourage private companies to invest in high-tech ambulances equipped with telemedicine and remote medical capabilities, especially in major cities.

### EXAMPLE



GVK Emergency Management Services, a private operator, has set a high standard for ambulance services in India with their well-equipped ambulances and trained personnel<sup>[8]</sup>.



At least 168,491 people were killed on India's roads last year, data released by the government shows that India accounts for just 1% of the global vehicular population but is among the highest number of accident-related deaths in the world. Through innovative PPP Initiatives like Kolkata Accident Rescue and Medical Assistance (KARMA), wherein 18 Ambulances are operated by professionals from Medica hospital and Kolkata police supported by Tata steel as CSR partner have saved over 3000 lives in a single year through this value-based collaboration. This is a model that can be easily replicated across the country to save thousands of lives.

**Mr. Ayanabh DebGupta**  
**Co-founder & Jt. Managing Director,**  
**Medica Group of Hospitals**



<sup>[8]</sup> [https://www.gvk.com/files/inthenews/Care\\_on\\_the\\_Go\\_manage\\_india\\_PMI\\_September\\_Issue\\_feacaaeb56c7441895752f6b35f1de73.pdf](https://www.gvk.com/files/inthenews/Care_on_the_Go_manage_india_PMI_September_Issue_feacaaeb56c7441895752f6b35f1de73.pdf)

### 3. INNOVATIVE SOLUTIONS

#### ACTION ITEMS



Collaborations with existing taxi operators like Ola or Uber can facilitate the provision of medical taxi services equipped with basic medical support, thereby alleviating the burden on BLS ambulances, and ensuring their availability for critical emergencies.



Develop a public awareness campaign to educate citizens about the appropriate use of ambulance services and encourage them to use medical taxis for non-emergency situations.



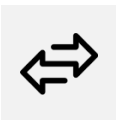
Implement a system for verifying ambulance requests to minimize misuse for non-emergency purposes.

### 4. ADVANCED TRAUMA CARE SYSTEMS

#### ACTION ITEMS



Invest in creating a network of trauma centres with advanced medical facilities and specialized staff strategically located across the country.



Develop protocols for inter-hospital patient transfers ensuring efficient coordination between ambulance services and healthcare facilities.

#### EXAMPLE



The state of Kerala has a well-developed trauma care system with a network of ambulances and trauma centres, resulting in improved response times and patient outcomes<sup>[9]</sup>.

*By implementing these strategic measures, India can fortify its ambulance network and enhance its capacity to deliver timely and effective emergency medical care, thereby safeguarding the health and well-being of its citizens in the face of evolving healthcare challenges.*

[9] <https://www.newindianexpress.com/states/kerala/2017/sep/08/indian-medical-association-to-create-network-for-trauma-care-in-kerala-1658805.html>



**PASSION**

for providing solutions to help clients achieve their goals

**RESPECT**

for all and alternate viewpoints

**INTEGRITY**

of thoughts and actions

**MASTERY**

of our chosen subject to drive innovative and insightful solutions

**US**

representing the Primus collective, where each individual matters

**STEWARDSHIP**

for building a better tomorrow

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