

Use of location analytics and business intelligence in Emergency Medical Services (EMS)

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Agenda

Introduction to Geo-Spatial technologies and general use

- What is Geo-Spatial
- Application of GIS in safety domain
- Usefulness of GEO-Spatial for Emergency Management

Why GIS ? GIS an Ideal solution.

Key Challenges

Using GIS in Emergency Management

Introduction to Medulance and services

- Use of location analytics
- Remote surveillance
- Technology allowing data sharing for higher patient care

How we are doing at Medulance

Achievements


Way forward


- Connected devices and apps
- Penetration numbers
- Possibilities.

Introduction to



Geo-Spatial technologies and general use

What is Geo Spatial Technology?

 **Geo-spatial** technologies are primarily referred to the range of tools that are used for geographic mapping and analysis in a wide variety of application areas like **Emergency Response, Health, Crime Mapping, Crime prevention, weather alerts** etc. Systems with large computing and processing abilities led to the storage and transfer of images from satellites to user systems. Also, the concomitant development of corresponding software for analytics, development of subsidiary maps and collation of complex data sets on geographic, demographic, socio-economic and environmental phenomena have collectively helped development of the **Geographic Information Systems (GIS)**.

 One of the most important features of GIS is its capability towards assembling a large range of geospatial data into a layered set of maps that allows complex themes to be analysed and then communicated to wider audiences. This layering is facilitated due to the presence of data that includes details on an entity's precise location/coordinates on the surface of the Earth, thus leading to the term '**Geo-Spatial**'.

Application of GIS in Safety Domain

-  Geographic information provides an intuitive and comprehensive view of data for all public safety organizations including law enforcement, emergency medical services, computer-aided dispatch, homeland security, and emergency management. GIS helps public safety personnel make informed decisions that support all aspects of their missions.
-  GIS supports the consolidation of information systems and business processes across a public safety organization, among multiple agency jurisdictions, and with the private sector. Integrating GIS with other public safety systems dramatically improves the effectiveness and efficiency of daily operations. It also enhances response to major incidents such as natural disasters and man-made catastrophes.

Usefulness of GEO-Spatial in Emergency Management

For Decision making - require information like

Where ...? Incident exact location, Critical Infrastructure

Where is ...? Nearest Hospital, Fire Station ...

Where do I ...? Safety storage siting ...

What are ...? Sensitive & Vulnerable Areas...

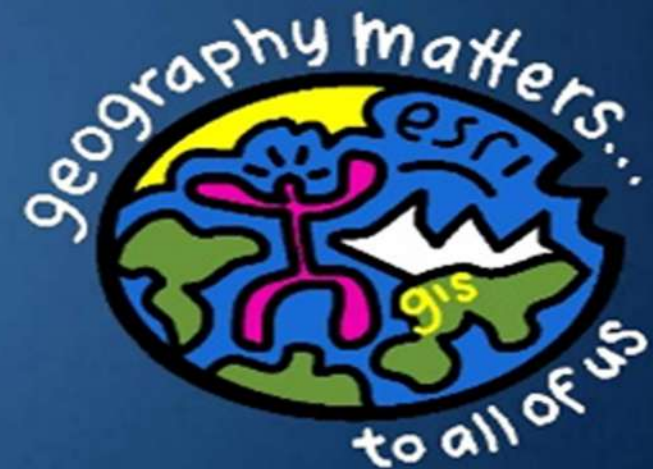
What if...? Facility provided...

Which ...? Optimum Route ...

How many...? People are affected by floods ...

How does...? Sustainable development ...

What has changed ...? Deforestation, Disasters, ...

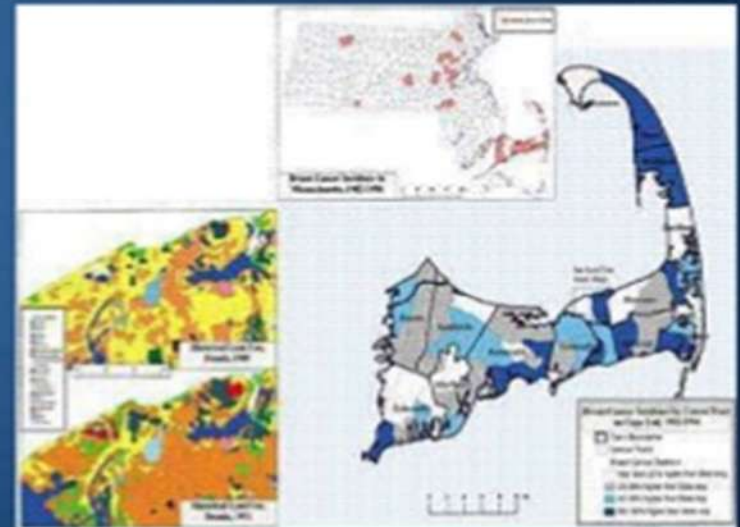


GIS –An ideal Solution

Why GIS ?

- **Integrate** many different types of data
 - Spatial data + Non-spatial data (statistical, texts,..)
- With GIS we can easily:
 - Draw maps and visualize spatial distributions
 - Edit and alter existing data
 - **Map where things are?**
 - Map Quantities & Densities
 - Accurately measure distances and areas
 - Simulate scenario's for better planning







& much more



Key Challenges

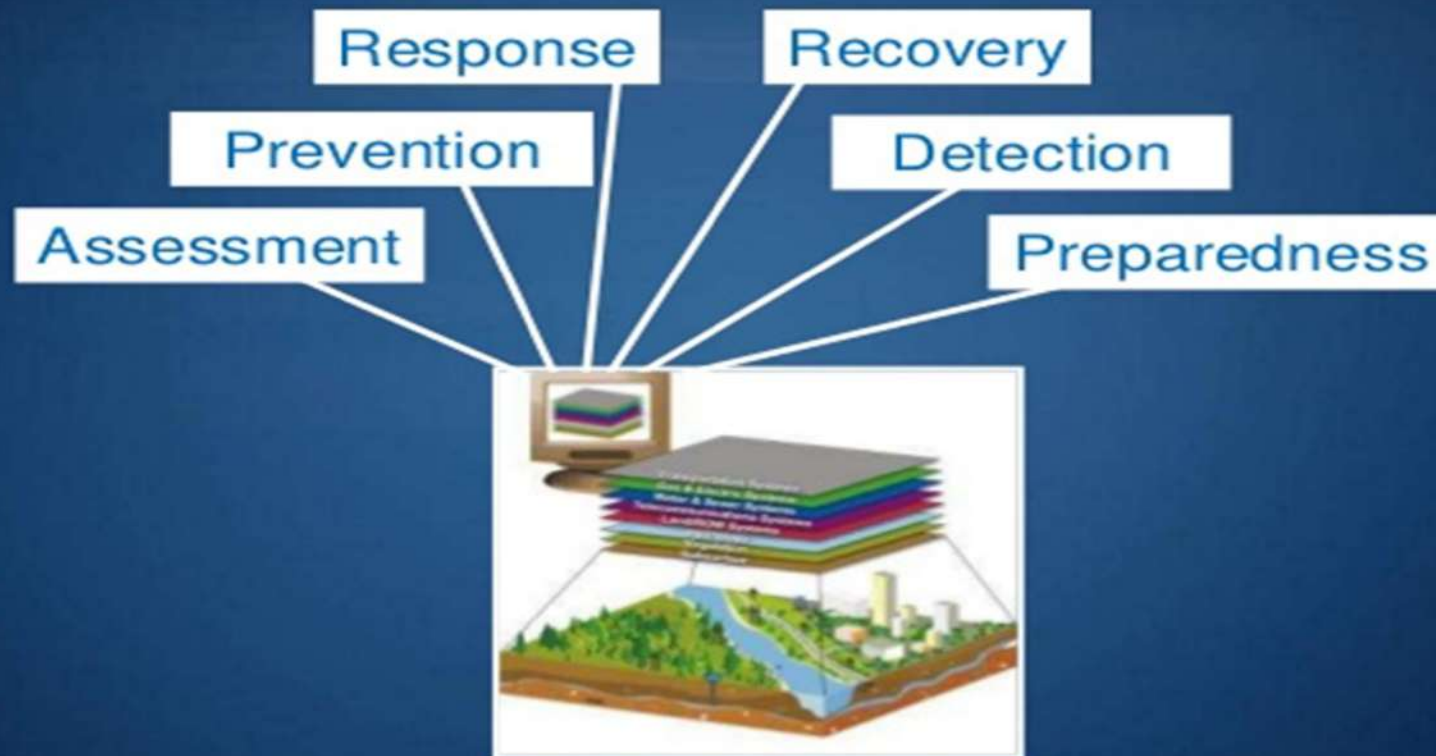
The various phases of emergency management involve data gathering from numerous sources which sometime becomes very difficult to collate and interpret at the time of emergency. During the time of emergency it becomes essential to have the right data, at the right time, displayed logically, in a unified format, to respond and take necessary actions on the basis of criticality. Emergency response personnel often need details to analyse and interpret the actionable insights that needs to be implemented.

Challenges in traditional methods of providing emergency response to citizens:

-  Lack of availability of data at one place to provide emergency response
-  Lacks efficiency and routes optimization in the existing system
-  Loss of valuable time in reaching emergency response
-  No historical data pertaining to geo-location to ascertain or predict the nature of risk
-  Lack of co-ordination between multiple departments to quickly send a response team
-  No real-real time monitoring tool

Using GIS in Emergency Management

Using GIS for Emergency Management



Problem - Why are we doing?

Unavailable

Unresponsive

Unreliable

Untraceable

Unorganized

Unregulated



Insufficient Ambulance

As per WHO norms, there should be 1 ambulance per 80,000 people, but India has a weak ratio of **1:2,40,000**.

30%
Deaths

30% of emergency cases can be saved of their lives, by timely emergency services.

4 Lakh+
Emergencies
per day

As per the government of India stats, there are 4 Lakh+ emergency situations everyday, which includes cases of road accidents, pregnancies, heart attacks and others.



Lack of Awareness

People don't know to get the nearest ambulance.



Technology

Upgrading the existing infrastructure: Both digital and non-digital will help in bringing down the response time.



MeduLance

• Assisting Lives •

India's first GPS based

ambulance booking and tracking system designed to provide first point medical attention.
Since inception Medulance has assisted more than 3000 lives receive timely medical attention.

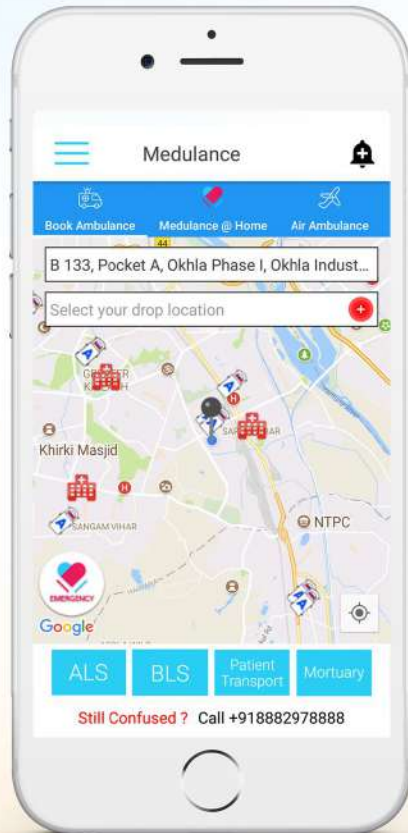


Use of Location Analytics - Medulance Technology

Medurange







Medulance User




Meduredic



Features

-  Ambulance Booking
-  Ambulance management systems for discharging LAMA patient.
-  Online patient monitoring.
-  Pre-Hospital Care reports for paramedics.
-  Fleet management
-  Ambulance tracking

Medulance Monitoring System

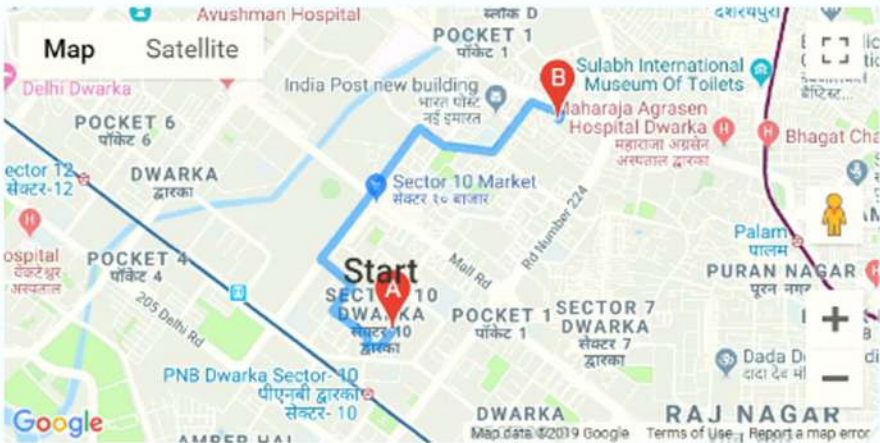


Lokesh
Manipal Hospital


- Dashboard
- Call List
- Driver
- Ambulance
- Bookings
- Profile

Logout

Map Satellite



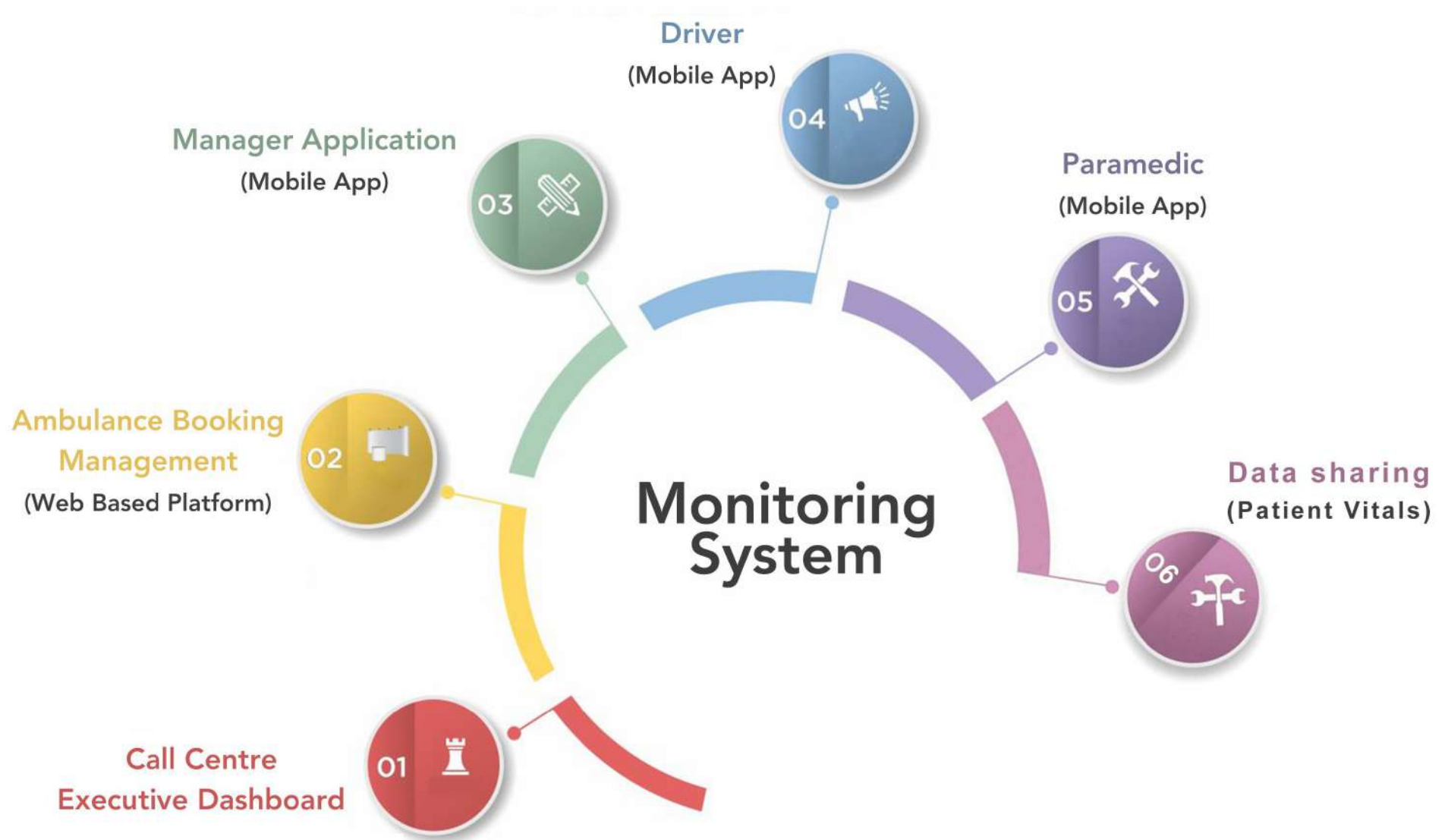
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Source	Sector 10 Dwarka, Dwarka, Delhi	Paramedic		Doctor
Destination	Manipal Hospitals Dwarka Pvt. Ltd., Palam Vihar, Sector 6 Dwarka, Dwarka, New Delhi, Delhi	Paramedic Number	<input type="text"/>	
Booking Status		Doctor Number	<input type="text"/>	

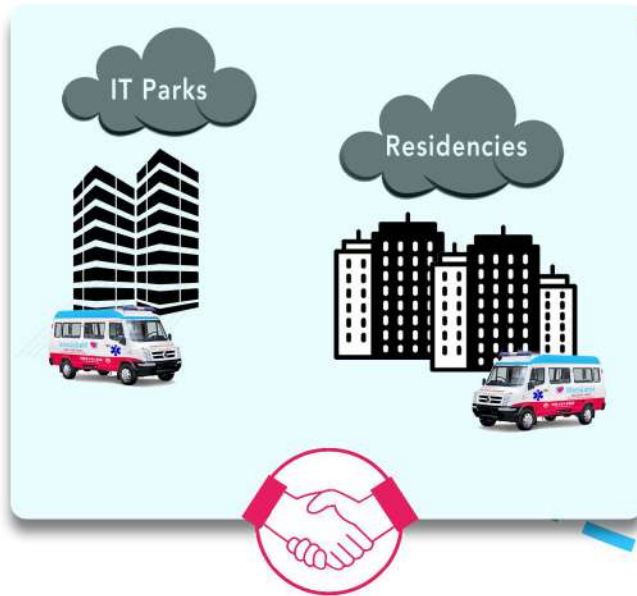
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Technology Allowing data sharing for higher patient care



How are we doing @Medulance

B2B Partnerships



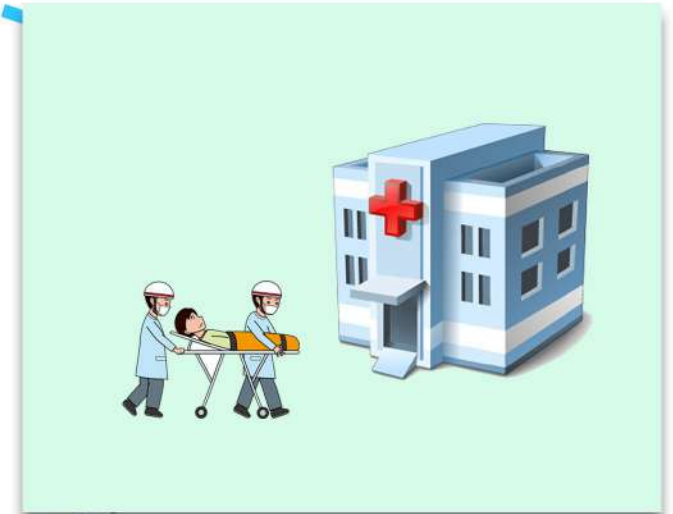
Medulance **partners** with Commercial Facilities, Residencies, Amusement Parks, Educational Institutions and communities to **station it's ambulance** and activate an Emergency Response System (ERS).



Patient activates
THE ERS

Average Response time < 5 minutes

Partner Hospitals



Patients are taken to the **nearest partner hospital.**

How are we doing @Medulance








Call Center



Technology



Ambulance

-  Managing end-to-end operations
-  First out-sourced emergency response system for Manipal Hospitals
-  Technology allows the doctor to give remote advice to the paramedic
-  Ambulances have been activated with cameras and location tracking at all times
-  12 ambulances placed at strategic locations across Delhi/NCR



24/7 Call Centre



First ever ambulance Tele-medicine delivery

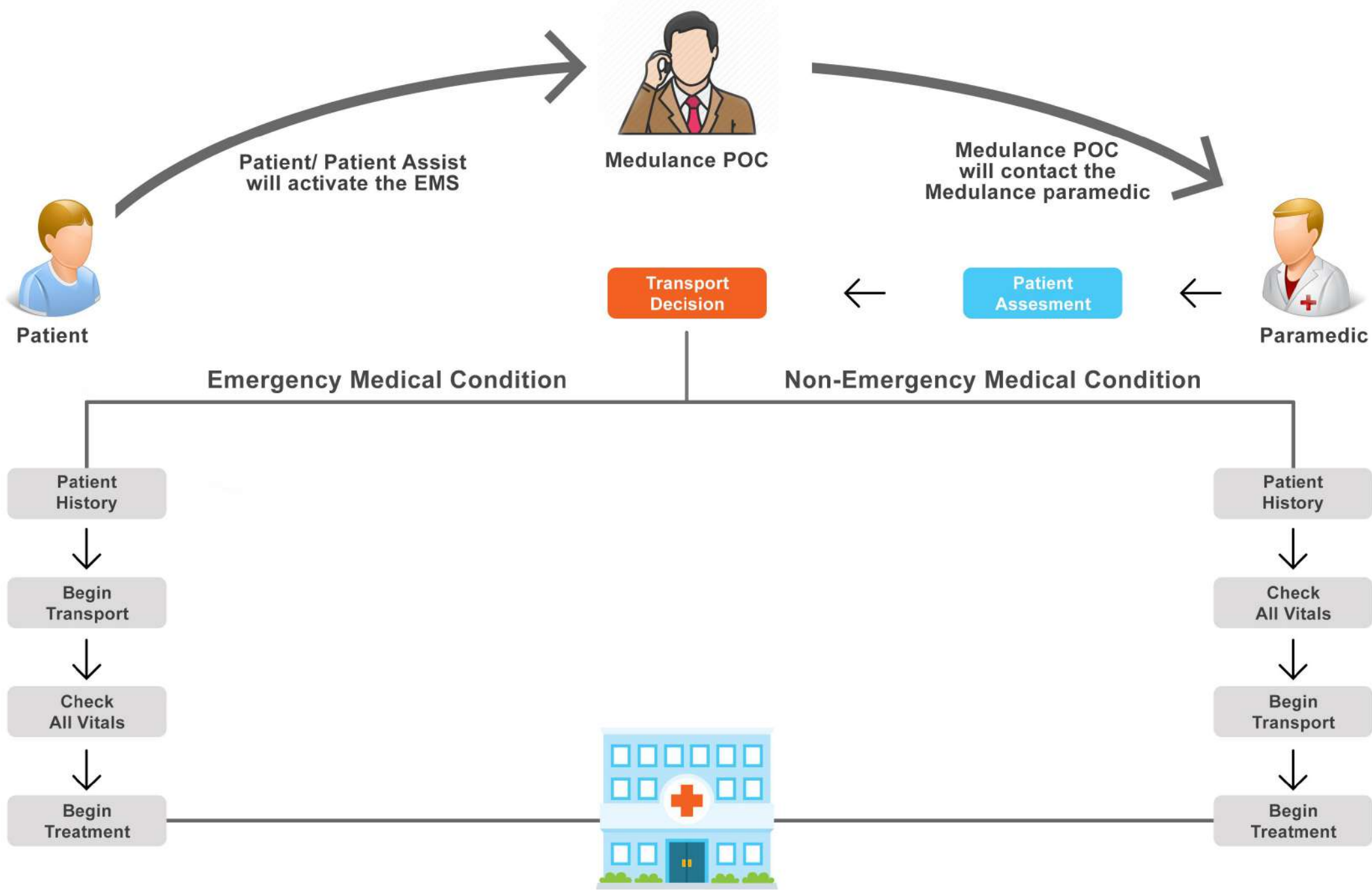


Complete location mapping and live feed



Experienced drivers and paramedics to handle all emergencies

Activation of Emergency Response System

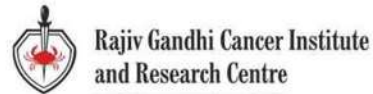


Our Clients

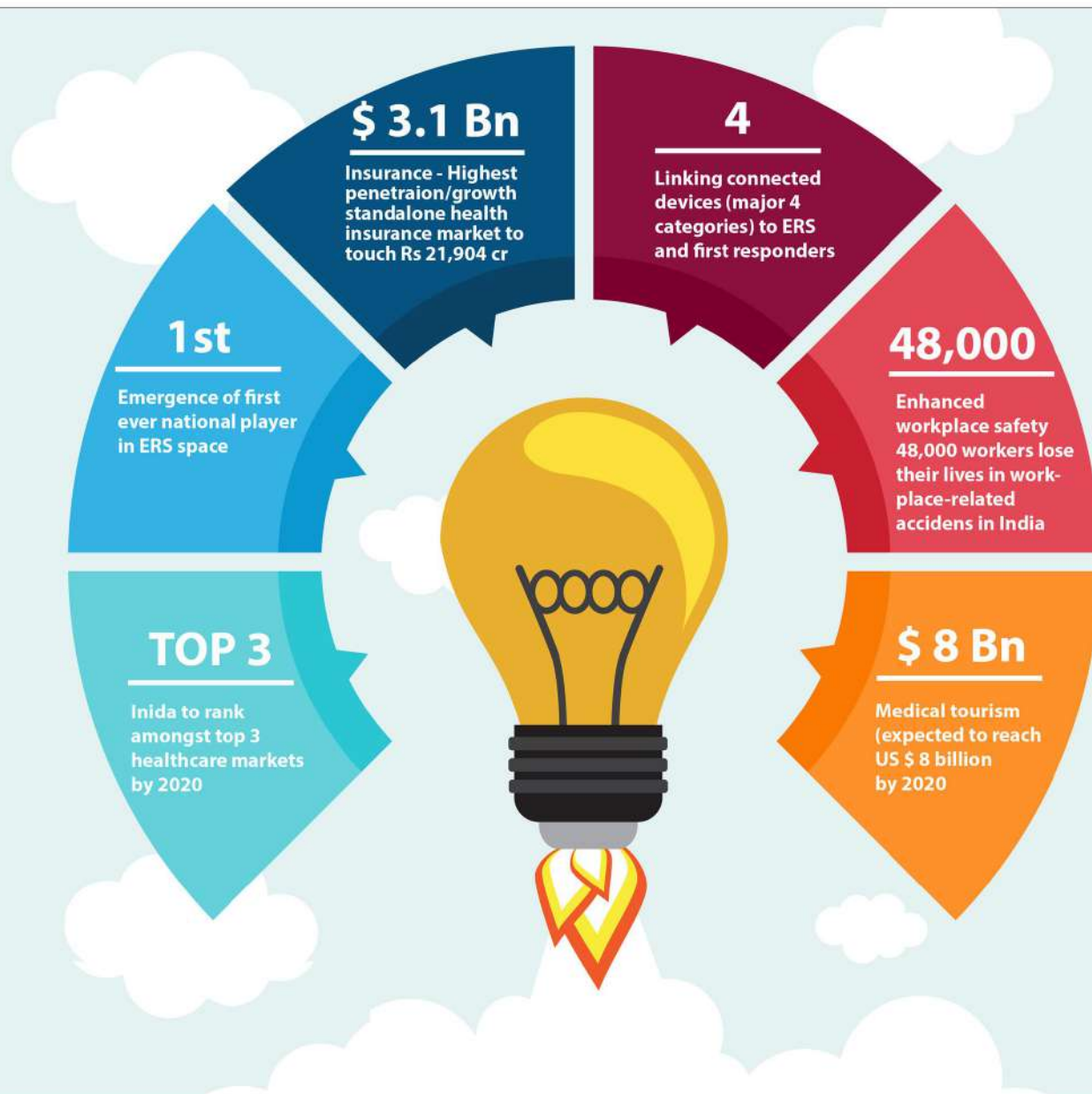
CORPORATE PARTNERS



HOSPITAL PARTNERS



Medulance Outreach



Sources :-

1. ibef.org (India brand equity foundation)
2. Fintellect
3. Statista
4. British Safety Council
5. Cii - Grand Thornton white paper

Innovation @Healthcare/ERS in India

Enhanced ERS
@Rural/Semi-Urban India

Augmented ERS infrastructure -
Air Ambulance/Drone/ICU on wheels

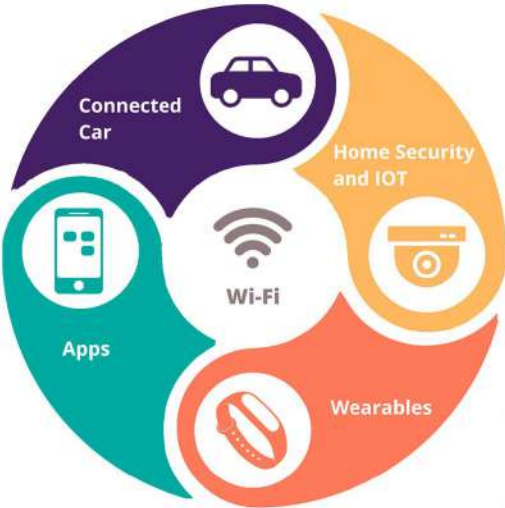
Intelligent Traffic Management
System + Central Monitoring System
to relay images on patient conditions

Digitisation of
Patient data

Penetration of
Smartphones



Way Forward -



API's to connect all devices and apps

2.7% by 2023

\$7189 Mn by 2023

\$1814 Mn by 2023



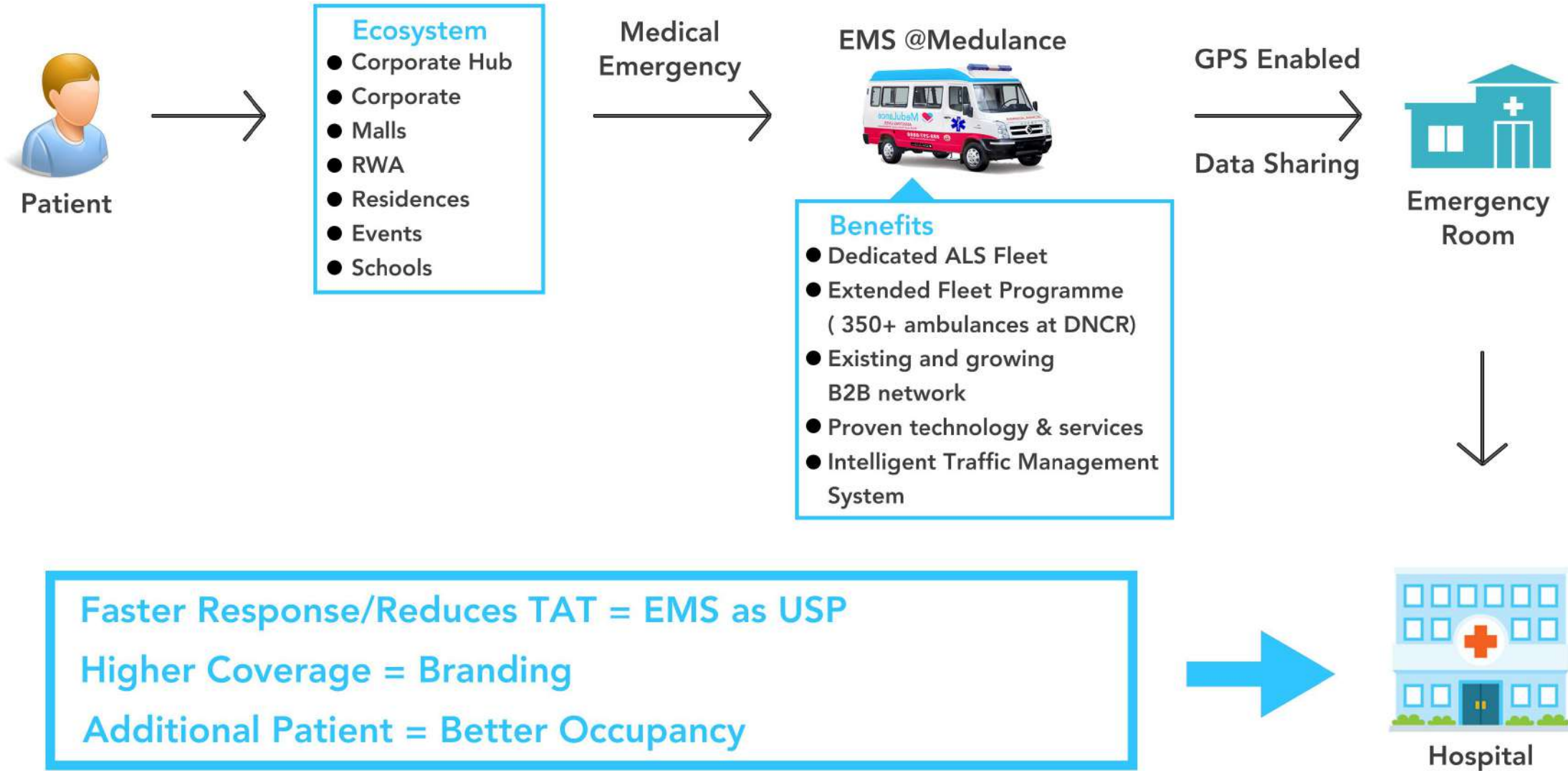
Ambulance
(Powered by Medulance)



Hospital

Key Benefits

A high quality ERS is the need of the hour and will always be critical to run a comprehensive healthcare system





Any Questions?