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GVK EMRI, India



6th IRF October, 2011

Regional Conference Road Safety Strategy in India – Action Plan

Emergency Services for Improving Road Safety

Uniform Network of Emergency Services System,

Dr. G. V. Ramana Rao, MD

GVK Emergency Management and Research Institute



Flow of Presentation

1. Emergency Medical Services (EMS)
2. Inputs and outcomes of uniform network of EMS @ GVK EMRI
3. Uniform Network of EMS – considerations for Road Safety Strategy in India – Action Plan

Emergency Medical Services –EMS (Pre-Hospital Care)

- ❑ An extension of hospital emergency department
- ❑ Provide link between an emergency in field and treatment in hospital

EMS is Responsible for

- ❖ Responding to calls in a timely manner
- ❖ Delivering qualified providers to the scene
- ❖ Providing emergency care from basic to sophisticated (EMT – Basic/ Paramedic)
- ❖ Transporting ill or injured to the closest, most appropriate hospital (BLS and ALS ambulances).

Benefits of EMS

Reduction in Mortality

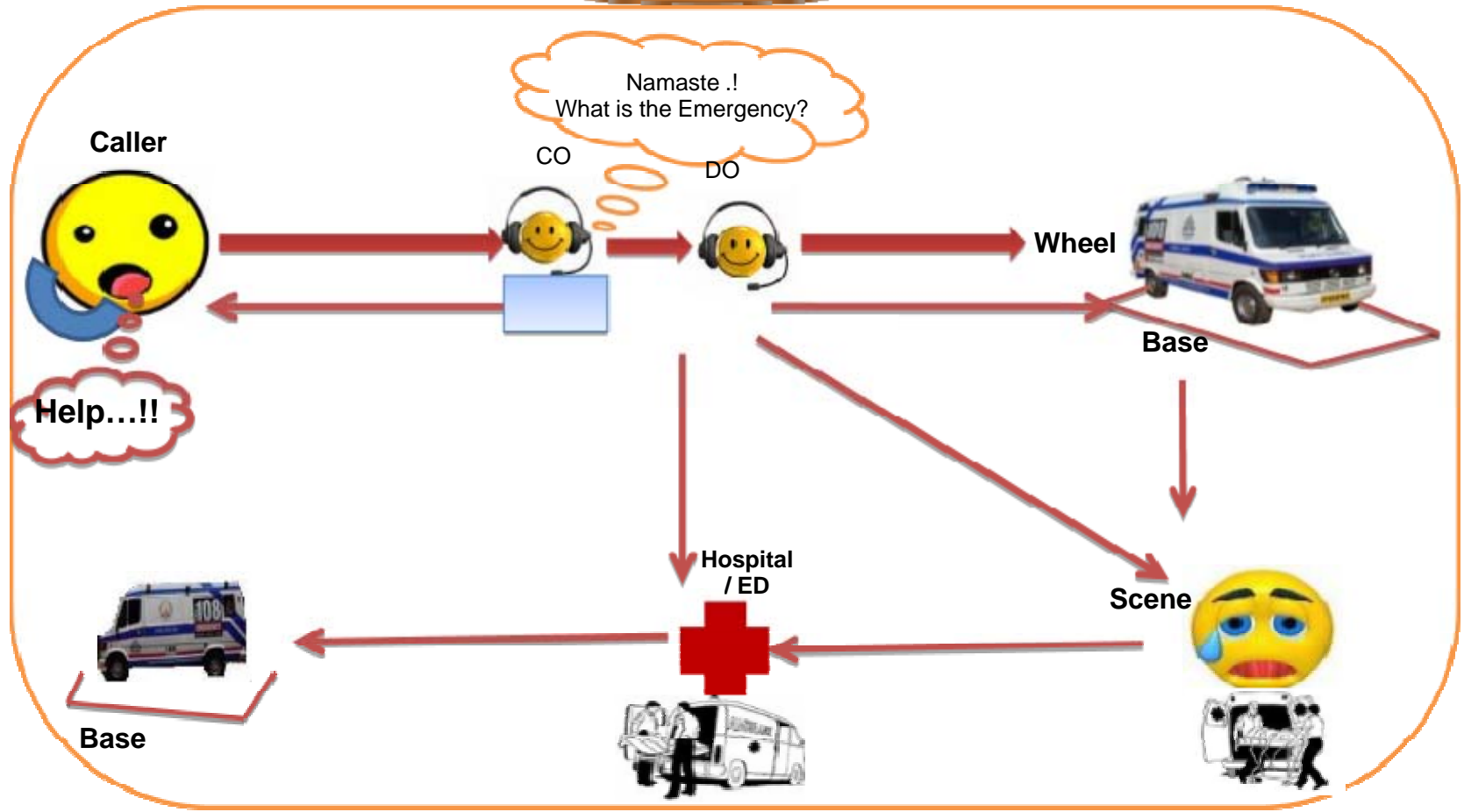
Reduction in Morbidity

Reduction in hospital stay duration

Responding to Emergencies – RTA Golden Hour



CASE HANDLING

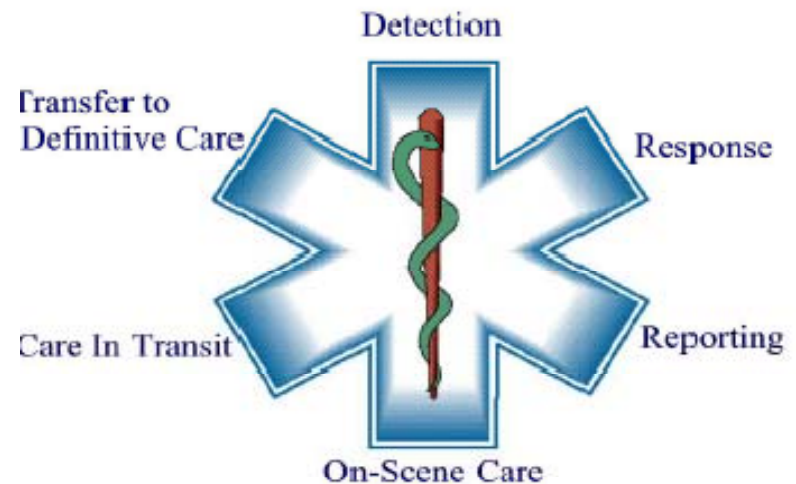


Golden Hour - 7 different time periods

1. **Time of injury** to Emergency call
2. Time of Emergency call to dispatch
3. Time of dispatch to Ambulance response
4. Time of Ambulance response to arrival on scene
5. Time spent on scene with the patient (On-scene)
6. Time of Ambulance transport to the hospital (en-route)
7. *Time the patient spends in the emergency room prior to surgery*

EMS – Definition and concept

- **Emergency medical services** are
 - A **network** of services coordinated to provide aid and **medical assistance from primary response to definitive care**, involving **personnel trained in the rescue, stabilization, transportation**, and advanced treatment of traumatic or medical emergencies. Linked by a **communication system** that operates on both a local and a regional level, EMS is a system of care, which is usually initiated by citizen action in the form of a **telephone call** to an emergency number.
 - **Mosby's Medical Dictionary, 8th edition. © 2009, Elsevier**



GVK EMRI – Unified Network of EMS

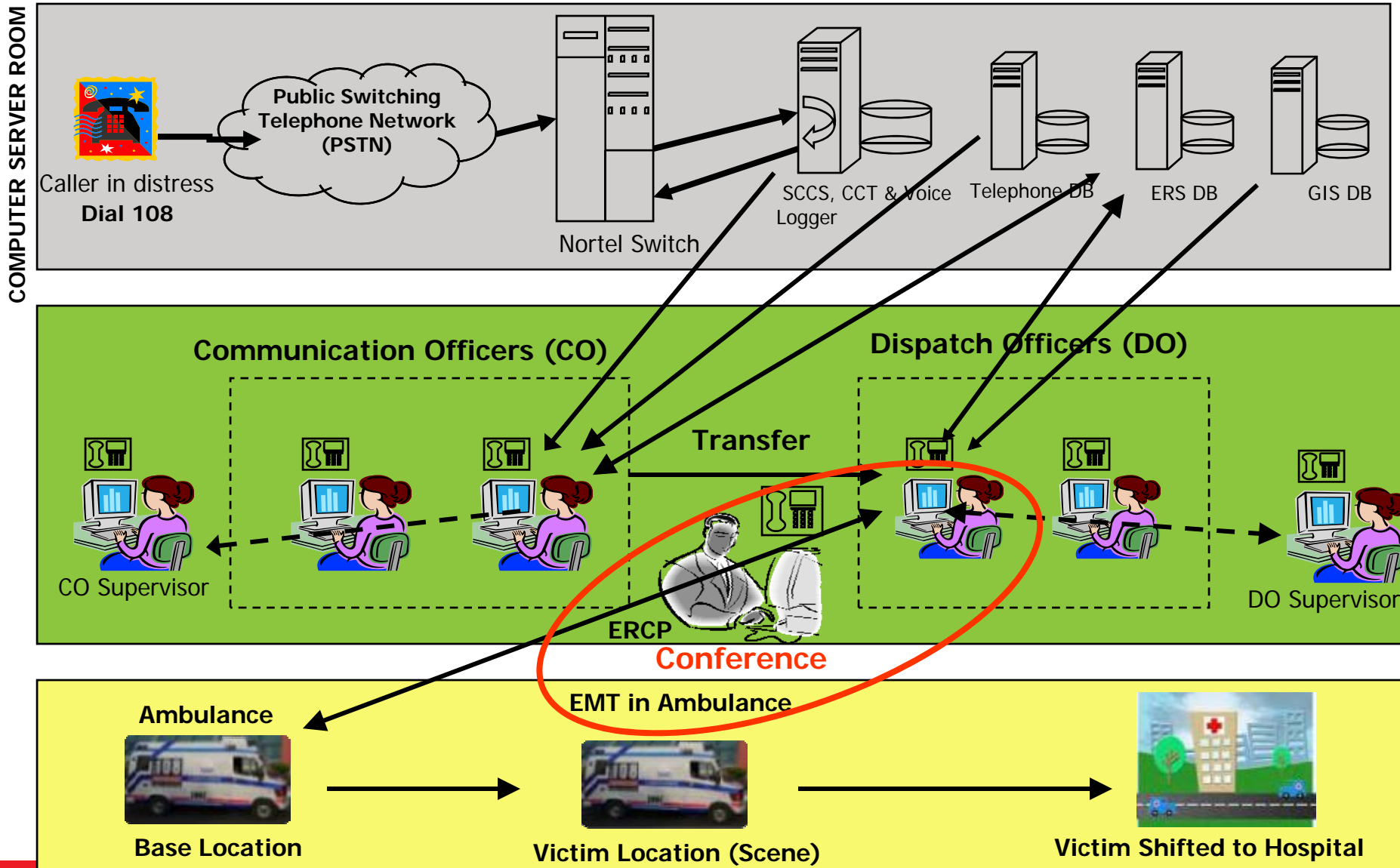


108 Number - Wikipedia

In Religions

- No. of beads on a Mala (Rosary of Beads)
- Sacred number in Hinduism in many ways (Pillars, Nama Japa, Krishna dances with 108 Gopies, Natraja dances in 108 poses)
- Sacred and significant in Bhuddism, Sikhism and Jainism
- The number of Surat al – Kawthar in the Quran, the smallest one of the book

Emergency Response Center (ERC)

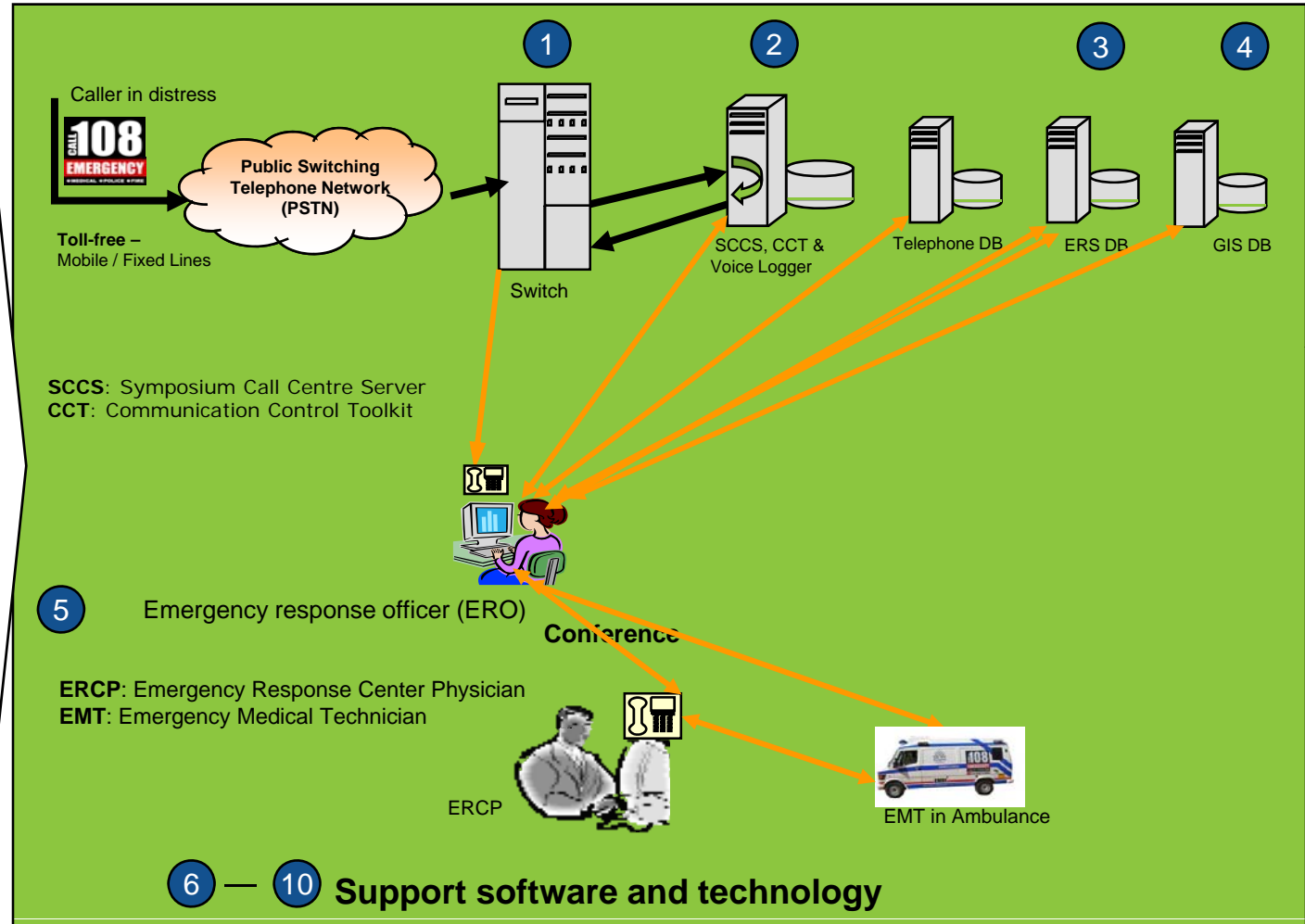


CCT: Communication Control Toolkit; SCCS: Symposium Call Centre Server; ERCP: Emergency Response Center Physician; EMT: Emergency Medical Technician

DISTINCTIVE TECHNOLOGY INFRASTRUCTURE – EMS – GVK EMRI

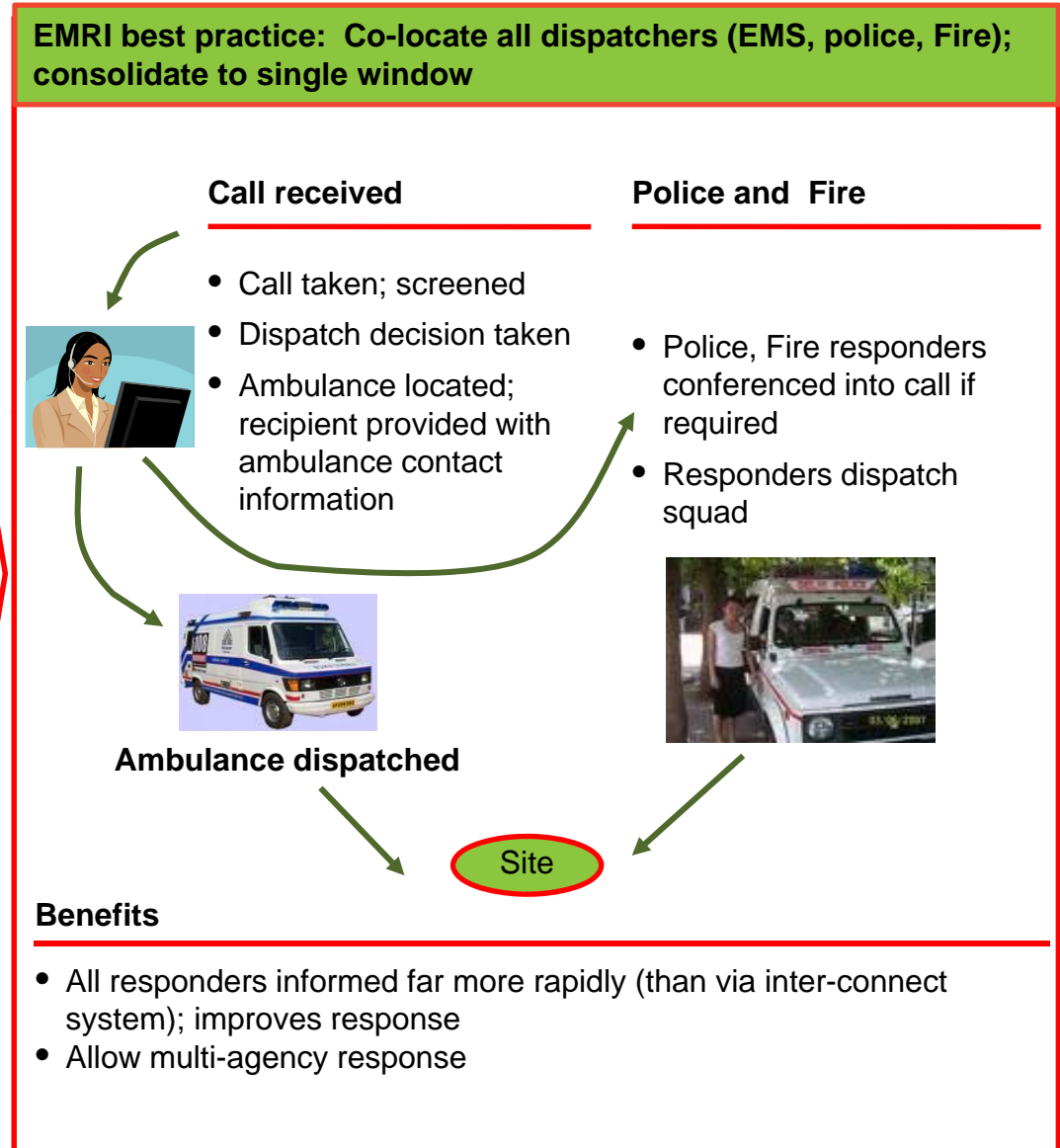
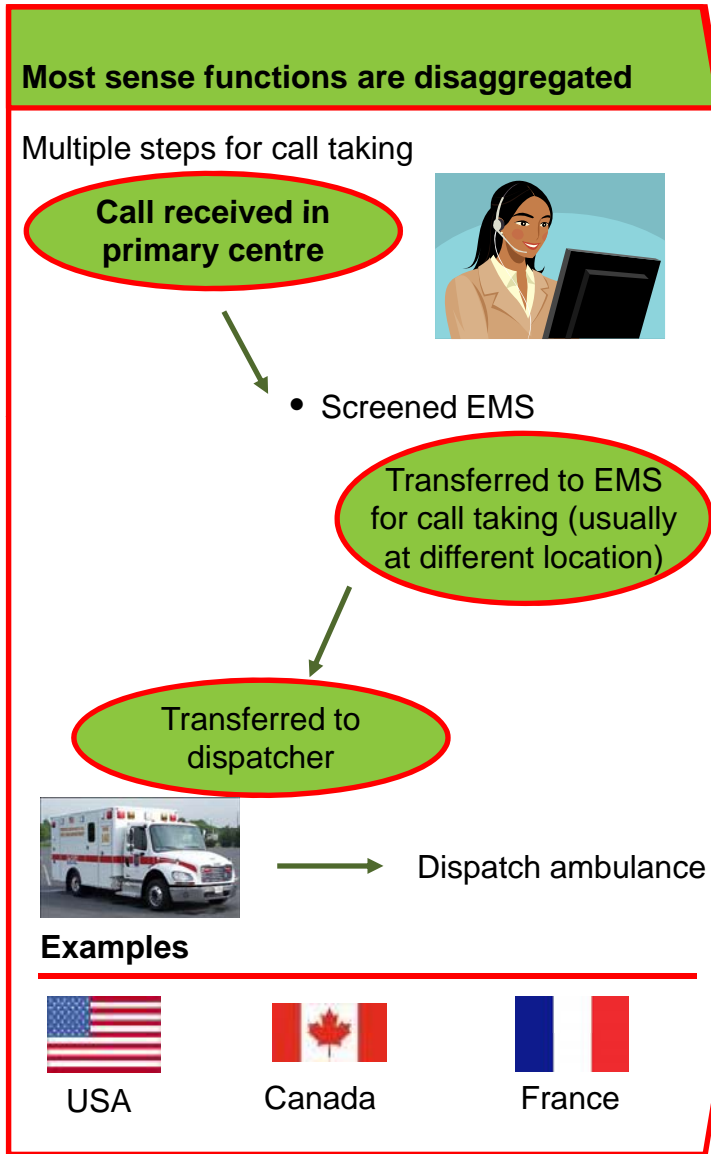


- Major components**
1. Computer Telephony Integration
 2. Voice Loggers
 3. GIS/Maps
 4. GPS/AVLT
 5. ERO
 6. Allied applications (PCR, Fleet Management, Hospital facilities)
 7. IVR
 8. Webcam
 9. Oracle Financials, CRM
 10. eLearning



* Handles over 165,000 Emergency Calls/day, manages over 12,500 dispatches per day and saves over 250 lives daily

CO-LOCATE ALL EMERGENCY CALL TAKERS INTO ONE CENTRE, WITH A "SINGLE WINDOW" FOR ALL CALLS



KEY ASSETS REQUIRED FOR SENSE, REACH AND CARE SERVICES FOR EMS



Assets deployed (as of August 11)

Service level impact

'Sense' (Call centre dispatch)

- GIS/Maps and GPS/AVLT technology
- Integrated call handling and dispatch functions
- 600 call center associates

- Response within two rings
- Call taker freed up in 90 seconds for next call

'Reach' (ambulance)

- Over 2900 Advanced and Basic Life saving ambulances
- 4 boat ambulance in Assam

- Reached with in 15 minutes in 90% cases
- Lower cost delivery

'Care' (pre- hospital treatment)

- Over 8000 EMTs** to provide pre-hospital care in ambulance
- Indigenous world class training program
- 100 ERCPs*** to guide and authorize EMTs
- Over 4000 MOUs with hospitals

- Immediate qualified assistance by trained EMTs (EMTs recruited after rigorous psychometric test)

* Reproductive and Child Health

** Emergency Medical Technicians

*** Doctors placed in call center to assist ambulance care professionals

REGIONAL APPROACH TO REPLICATE SYSTEM ACROSS LARGE AREAS

Typical approaches

“Centralized”

- One EMS system covers entire region/country
- Traditionally, small nations have taken a centralized approach to EMS service delivery
- All policy making, planning and service delivery is done by central agency

“Federalised”

- “Jigsaw” EMS coverage
- Due to evolution of localized services, large nations have taken a distributed approach to EMS service delivery
- Each region/country chooses its own operational model

Issues

- | | |
|--|--|
| <ul style="list-style-type: none"> • Difficult to retain transparency and efficiency with scale • Hard to scale up | <ul style="list-style-type: none"> • Expansion dependant upon investment by individual countries, hence slow to scale up (take decades to evolve) • Patchy service quality, with each country using different system |
|--|--|

Singapore



USA

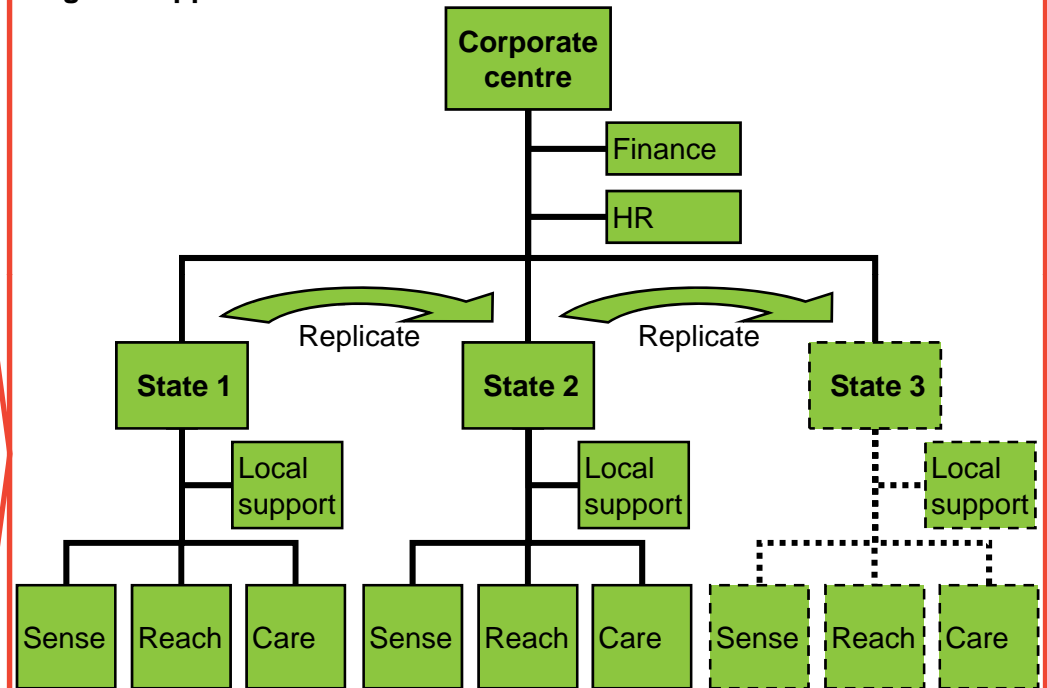


Germany



Best practice/EMRI

Regional approach



Benefits



- Standardized rollout model enables rapid, consistent and predicible roll out – **likely deployment to over 1 Billion people in less than 10 years**
- Lower cost of solution, (e.g., IT, vehicles) with higher speed of delivery due to standardized infrastructure
- Autonomous local organisations capable of modifying operations, to local needs

Inter-facility Transfer (IFT) – Guidelines

IFT	PHC / Small Private Clinic	CHC	Area Hospital	District Hospital	Govt.Hospital with Tertiary Care	Private Hospital with Tertiary Care
PHC / Small Private Clinic	No	Yes	Yes	Yes	Yes	Yes
CHC	No	No	Yes	Yes	Yes	Yes
Area Hospital	No	No	No	Yes	Yes	Yes
District Hospital	No	No	No	No	No	No
Govt.Hospital with Tertiary Care	No	No	No	No	No	No
Private Hospital with Tertiary Care	No	No	No	No	No	No

EMPLOY PHYSICIANS INTO CALL CENTRES TO MAKE CLINICAL OVERSIGHT AVAILABLE AT LOW COST

Several countries station physicians in ambulances

Country	Description
	<ul style="list-style-type: none">Physicians staffed in NAW/NAF type ambulances
	<ul style="list-style-type: none">3 FTE per ambulance<ul style="list-style-type: none">– Doctor– Nurse– Stretcher bearer

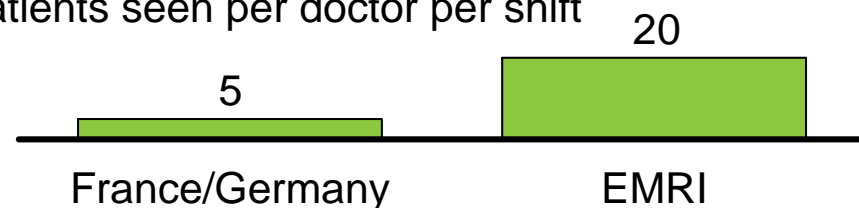
EMRI solution: Centralized physician pool, leveraging technology to provide “Virtual” cover

EMRI model

- Physicians stationed in call center, linked to ambulance via PC/webcam* to provide ‘telemedicine like’ experience
- EMT’s communicate with physicians electronically
 - EMTs Forward reports/ provide vitals data
 - Physicians advise procedural steps, recommend medications, retain oversight up to hospital

Higher physician productivity and lower cost

Patients seen per doctor per shift

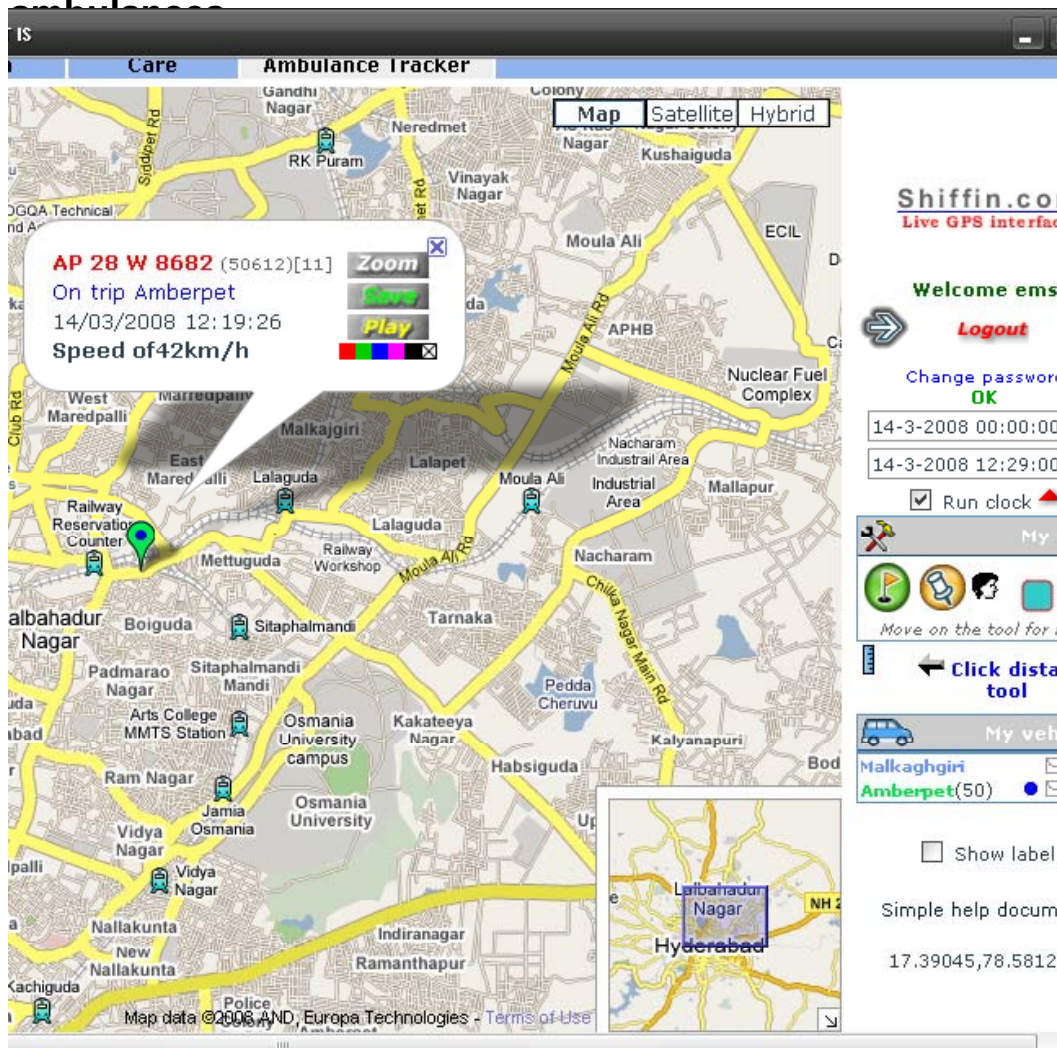


- ‘Virtual’ physician support available for every case and ambulance type; physician costs spread across entire fleet

DYNAMICALLY DEPLOY AMBULANCES TO MAXIMISE FLEET USAGE AND PRODUCTIVITY



EMRI uses GIS/GPRS/AVLT technology to monitor ambulances



Fleet deployment capabilities

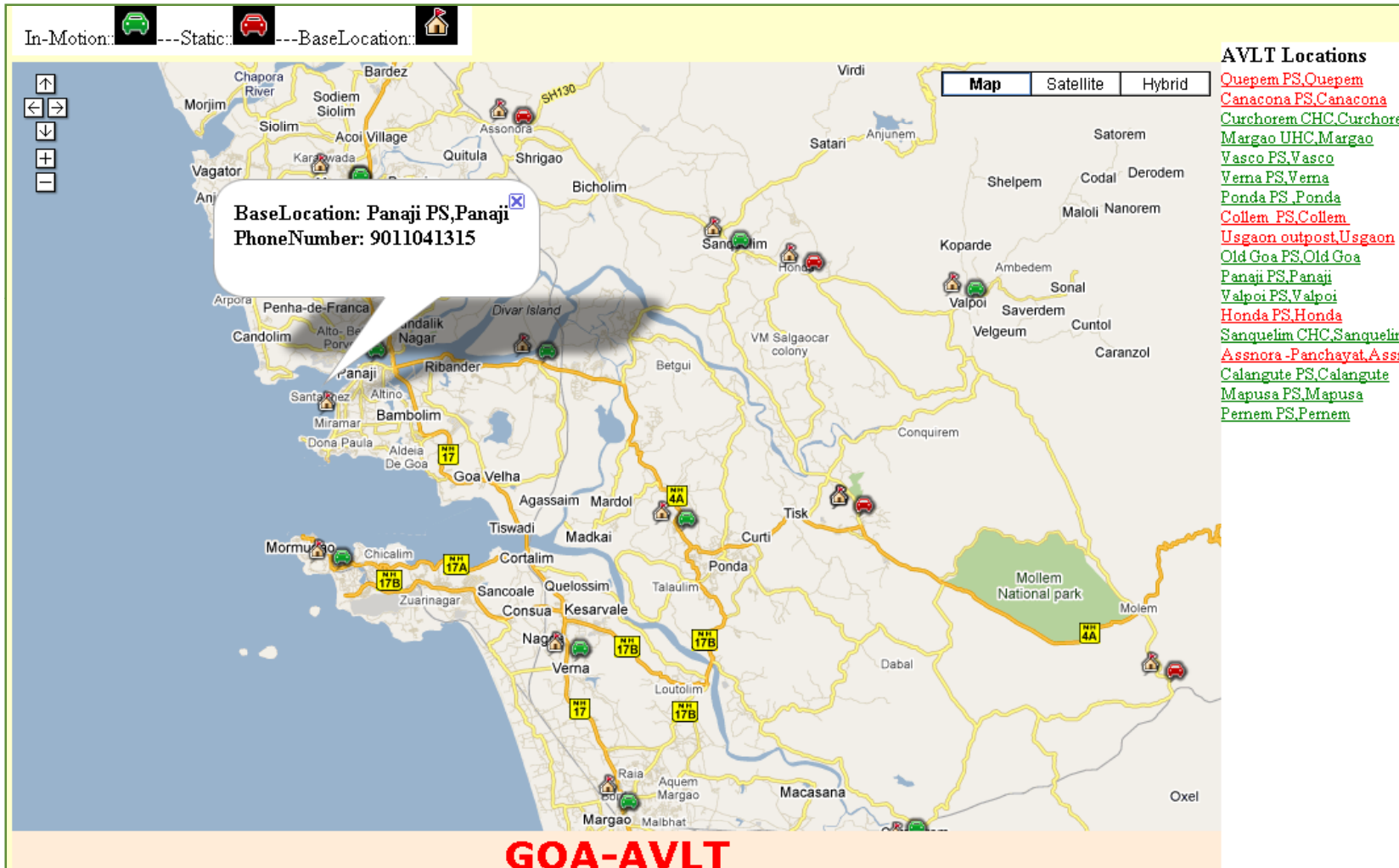
Real-time fleet management

- Use GSM signals from EMT mobile to locate ambulance
- Locates caller using GIS (automatic if calling from landline)
- ERO* locates closes ambulance, dispatches to emergency site

Periodic fleet re-distribution

- Monitor fleet utilization over time
 - Ambulance use by region
 - Nature of conditions
- Re-deploy fleet based upon usage statistics

AVLT- Ambulance Base location Information



Serving the most needy against all odds

GVK **EMRI**
Your Right to Safety.

CALL **108**
EMERGENCY
MEDICAL • POLICE • FIRE



Hospital Working Agreement

EMRI is a nodal agency authorised by Govt of Andhra Pradesh since 2005 to provide integrated emergency response services (medical, police and fire) accessed through toll-free "108" number. Ambulance based pre-hospital care is provided by trained Emergency Medical Technician (EMT) under the medical direction of qualified Emergency Response Centre Physicians (ERCs).

Hospital: Hospital providing emergency care will have:

- Round the clock availability of qualified medical professional
- Round the clock availability of qualified nursing professional

Integration of pre-hospital care with hospital services creates a seamless care-continuum for patients seeking immediate medical attention.

1. EMRI and _____ Hospital are unified to develop and sustain emergency healthcare services. We jointly assure that benefit of respective services is available to cases seeking immediate medical attention.

2. EMRI will be responsible for the following:

- a. Beneficiary/ies seeking immediate medical attention will be brought to nearest hospital of their choice &/or as found appropriate by EMRI.
- b. Case handover: EMTs will provide Prehospital Care Record (PCR) and share relevant clinical observations with attending Medical Officer of the hospital for the case/s presented to ensure care-continuum.
- c. Facilitate training of Doctors, Nursing Staff, Paramedical Staff and others in Emergency care as per mutual discussions & needs assessment.
- d. Conducting joint exercises/ initiatives as per mutual understanding from time to time.

3. Hospital will be responsible for the following:

- a. Receiving emergency case/s promptly by authorised medical attendant from EMT and maintaining care continuum through clinical screening, triage, emergency care and definitive care.
- b. Case Handover: Medical attendant will scrutinise the prehospital care information and acknowledge the PCR copy with signature, date/ time and hospital stamp that confirms the clinical handover of the case/s.
- c. Hospital will identify, plan and maintain adequate resources for emergency care to stabilise the health condition/s at all times.

4. Hospital will provide emergency care & stabilise all patients brought by 108 Ambulance Services:

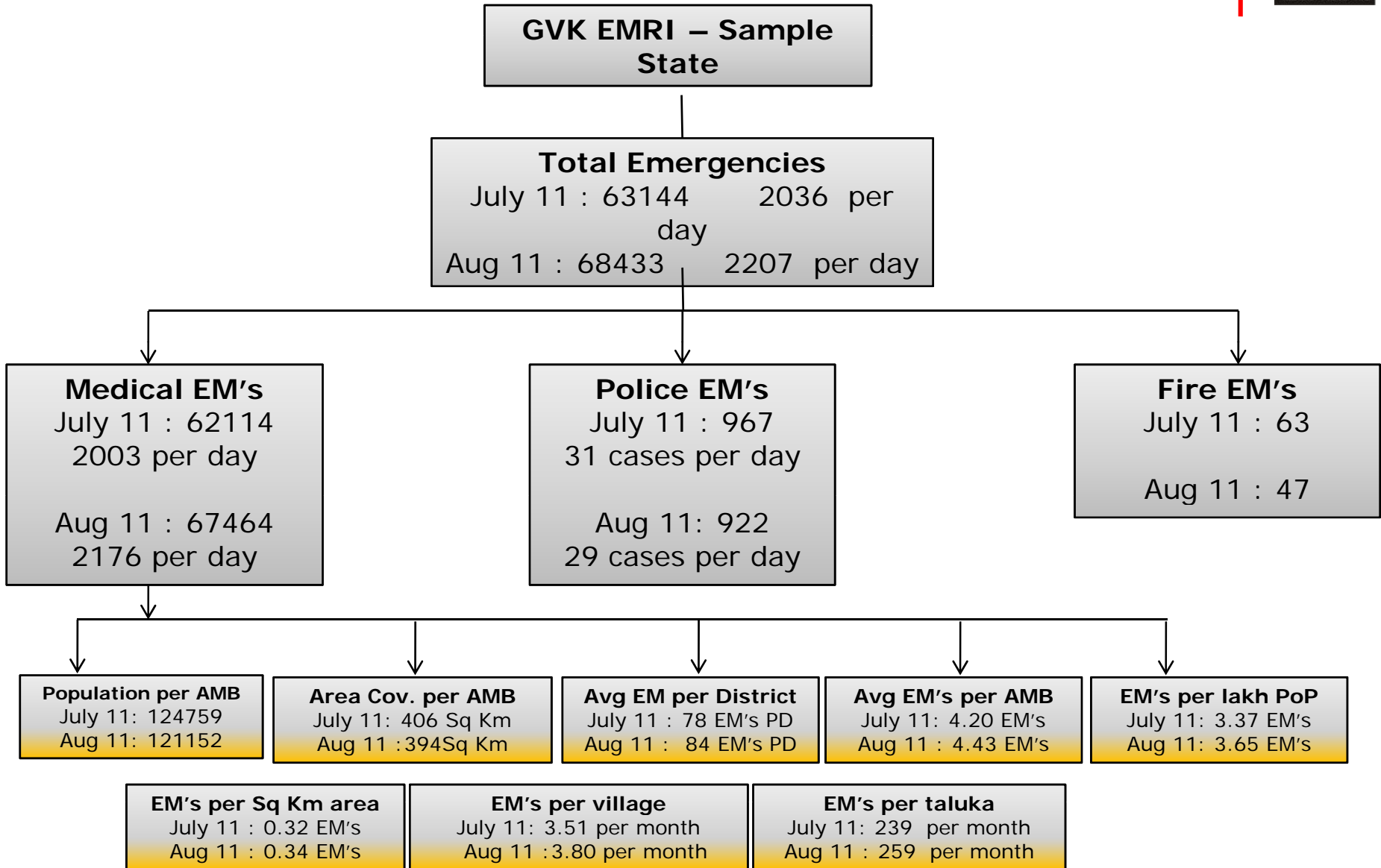
- a. Without insisting on advance payment
- b. Irrespective of attendant availability at the time of presentation

5. After the initial stabilisation, if the patient or their attendant express inability to bear a private hospital expenses, then the hospital will have the discretion to transfer such cases to another facility at their own cost.

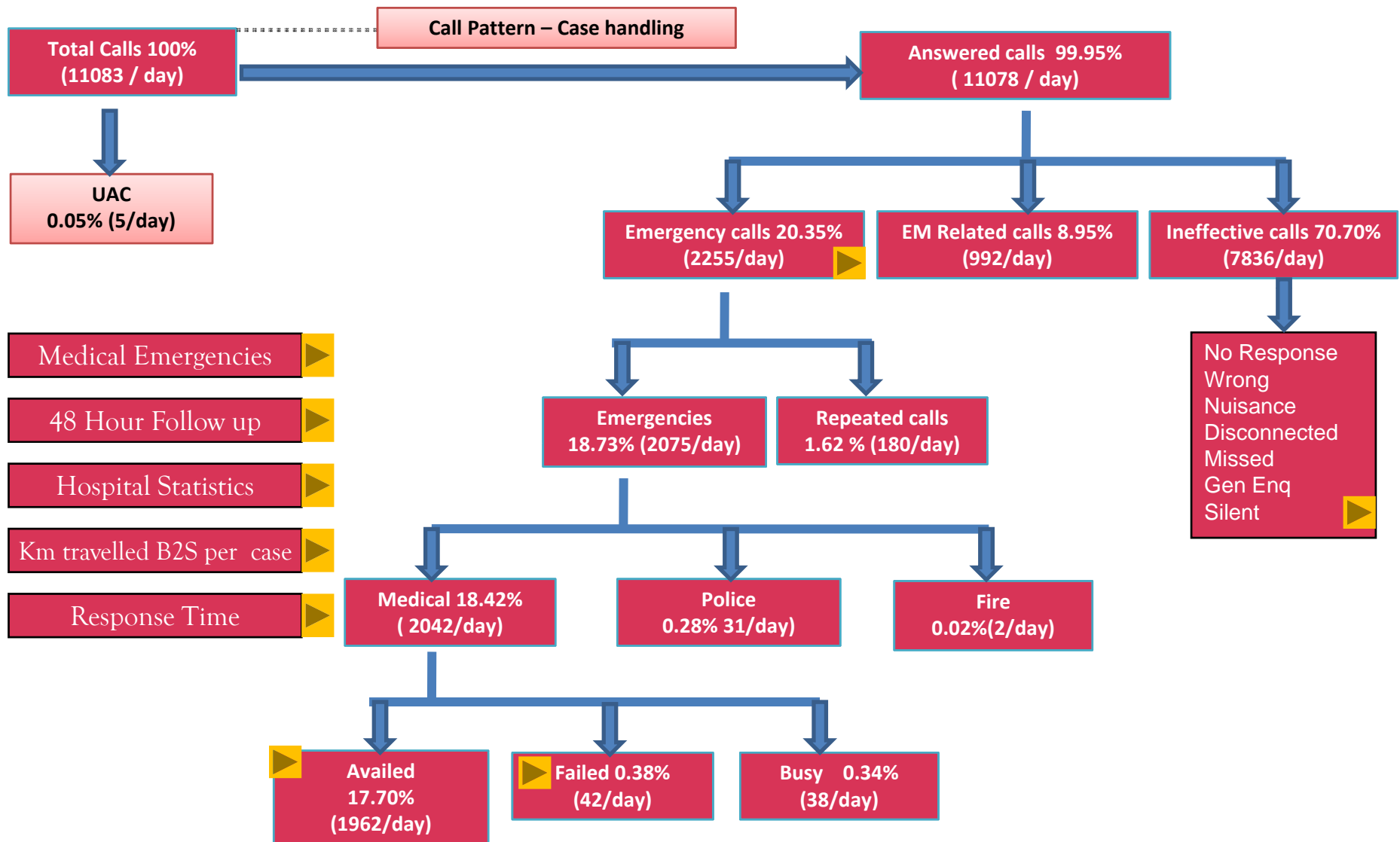
Date: September 07, 2011

CALLS (TODAY)			
States	Total calls	Emergency Calls	Emergencies
ANDHRA PRADESH	35,653	4,989	3,133
GUJARAT	11,112	2,319	2,120
UTTARAKHAND	6,091	471	400
GOA	563	122	116
TAMILNADU	20,435	2,169	1,689
KARNATAKA	16,983	2,266	1,907
ASSAM	9,590	1,610	1,107
MEGHALAYA	1,204	55	44
MADHYA PRADESH	23,812	995	647
HIMACHAL PRADESH	2,942	492	425
CHHATTISGARH	5,015	388	266
TOTAL (INDIA)	133,400	15,876	11,854
Emergencies (TODAY)			
States	Medical	Police	Fire
AP	3,021	98	14
GUJARAT	2,091	28	1
UTTARAKHAND	385	15	0
GOA	114	2	0
TAMILNADU	1,647	42	0
KARNATAKA	1,897	10	0
ASSAM	1,099	8	0
MEGHALAYA	42	2	0
MADHYA PRADESH	608	39	0
HIMACHAL PRADESH	405	20	0
CHHATTISGARH	249	17	0
TOTAL (INDIA)	11,558	281	15

State Performance Dashboard – July 2011



Calls process tree – July 2011





RTA Related– 8270 - 266 per day
0.44 cases per lakh population per day – 0.53 / AMB/Day

Urban / Rural flow of RTA Cases		
Urban	Rural	
4401 (55%)	3869 (45 %)	
MoM variance of Trauma related cases		
May-11	Jun-11	Jul-11
11921	9153	8270
25.84%	-23.22%	-9.65%

Source – ERC Server Data

Economic Status of Pregnancy Cases			
Status	Rural	Urban	Total
Pink Card	19.55%	20.89 %	40.45%
White Card	28.05%	31.50 %	59.55%

Cases beyond 20 min Urban C2S	
Less than 5 minutes	2.70%
5 minutes to 10 minutes	36.08%
10 minutes to 15 minutes	27.34%
15 minutes to 20 minutes	16.00%
More than 20 minutes	17.88%

RTA Cases of Medical EM = 13 %			
Age	Rural	Urban	Total
0-4	15.35%	84.65%	6.55%
5-9.	90.59%	9.41%	6.00%
10-14.	51.44%	48.56%	1.99%
15-19	40.11%	59.89%	6.78%
20-24	45.69%	54.31%	13.32%
25-29	45.57%	54.43%	12.96%
30-34	48.22%	51.78%	10.76%
35-39	49.14%	50.86%	10.54%
40-44	45.40%	54.60%	8.01%
45-49	48.49%	51.51%	6.97%
> 50	42.46%	57.54%	16.12%

Cases beyond 30 in Rural C2S	
Less than 15 minutes	34.45%
15 minutes to 20 minutes	19.97%
20 minutes to 25 minutes	15.56%
25 minutes to 30 minutes	10.40%
More than 30 minutes	19.62%

Social Status of Aailed			
Status	Rural	Urban	Total
BC	15.48%	17.97%	33.45%
NA	1.07%	2.13%	3.20%
OC	12.69%	19.92%	32.61%
SC	2.75%	3.50%	6.24%
ST	13.94%	10.56%	24.50%

Top 5 Rural Districts		
District 1	322	10
District 2	307	10
District 3	290	9
District 4	285	9
District 5	276	9

Top 5 Urban Districts		
District 1	1417	46
District 2	772	25
District 3	493	16
District 4	460	15
District 5	316	10

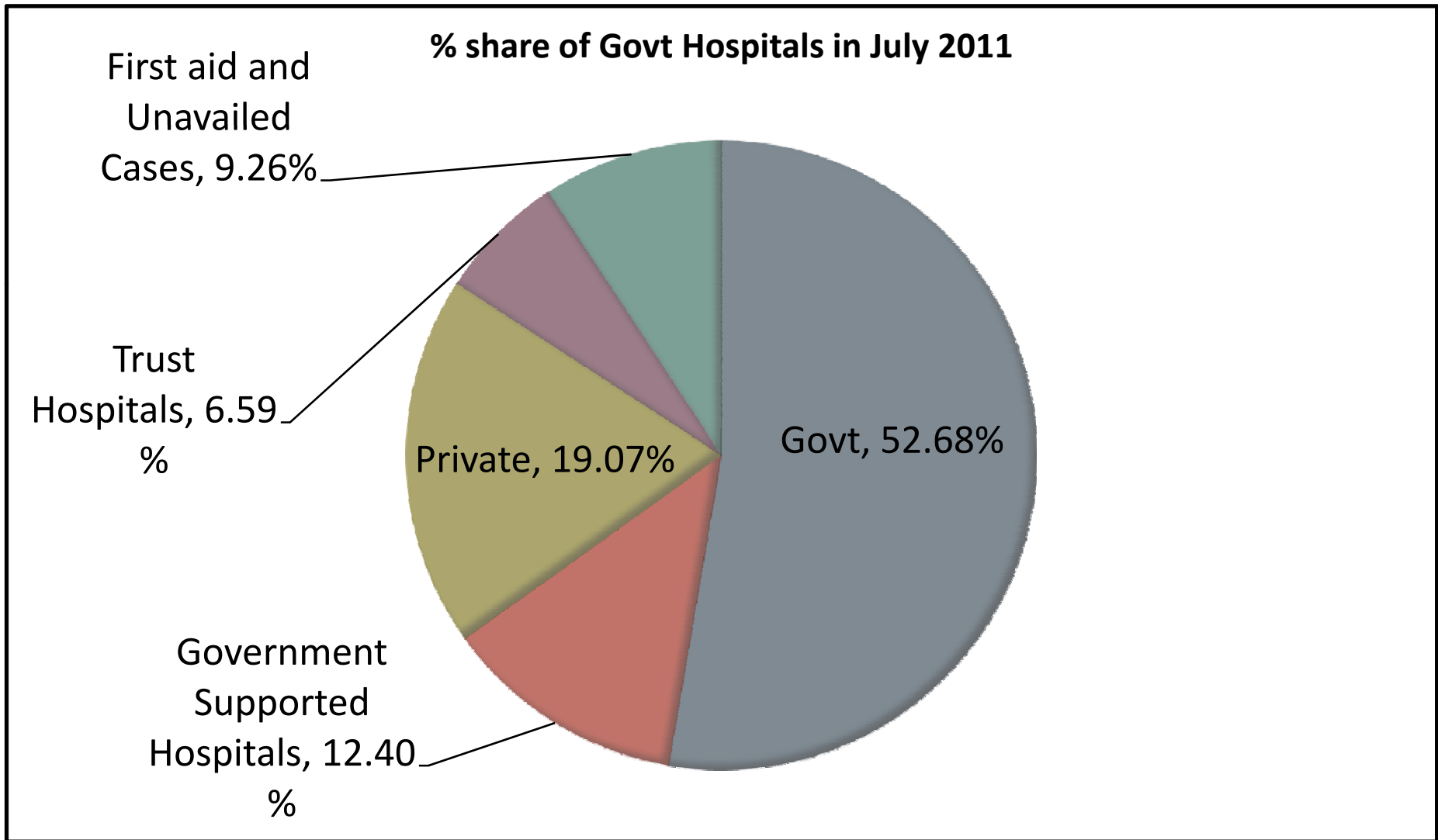
Top 3 sub types of Emergencies		
2 Wheeler accidents	7586	92.76%
Vehicle role over/Skid	154	1.93%
Auto (3 Wheeler accidents)	173	1.66%





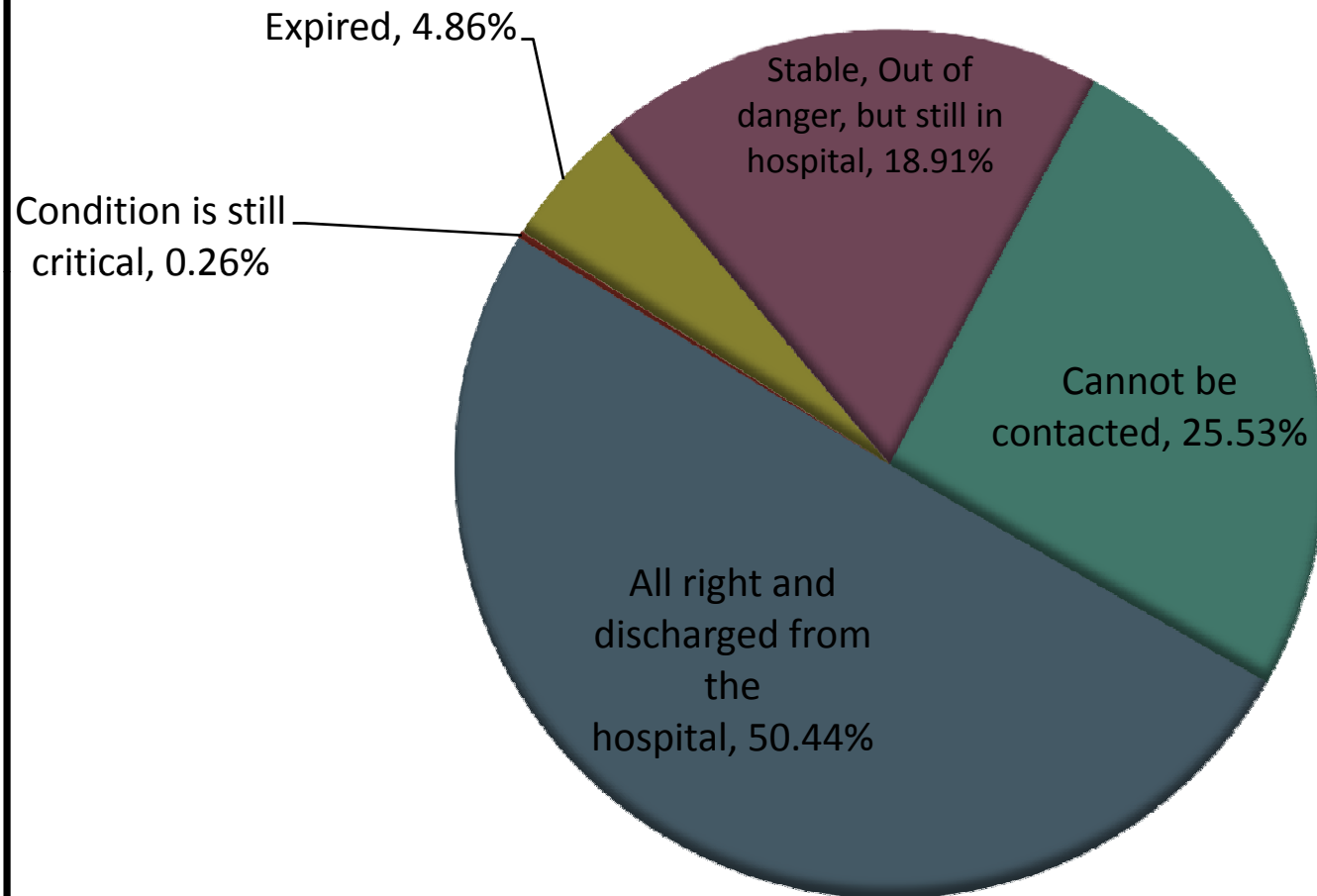
Hospital Statistics :

Details of victims who were shifted to various types of hospitals



▶ 48 hour follow up states of the victims who had availed the services and were contacted after 48 hours of availing the services

% share of 48 hour follow status of victims who availed the services

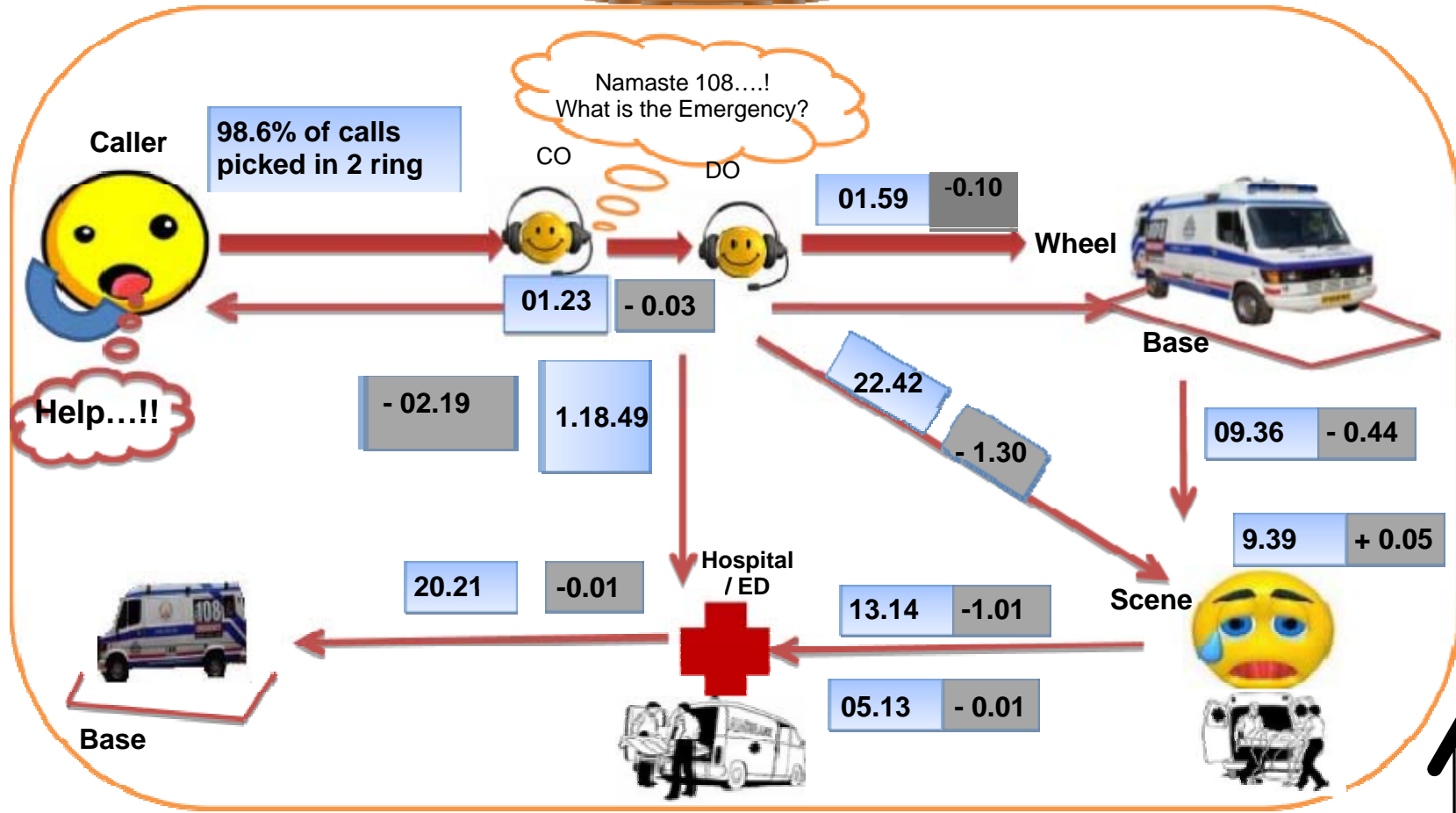




Responding to Emergencies : Average Handel Time



CASE HANDLING



+/- Variance over previous month

Source ERC Server Data



Case ID -27470
Location -Calangute
Date -19th Feb. 2011

CRITICALLY INJURED MOTORIST SAVED BY 108.



On 19th Feb.2011 in Calangute Ambulance Emt Sidharth Naik & Pilot Sanjay Pednekar were on duty. They received a Emergency call at 17:29 pm & the case was of R.TA.

After taking a call conference & confirming the exact location, Ambulance departed for the case at 17:30 pm. They reached the scene at 17:35 pm Le. within 05 minutes covering the distance of 3 kms.

When they reached the scene they found a 36 year old male named as Sasha Carlinin lying to the roadside. He was having avulsion above Rt. Eye on frontal head, & laceration on the multiple regions of the rt. Side of the face, abrasions on the multiple regions. He was having profuse bleeding through the wounds .Pt. was in semiconscious state .They took the pt. into the ambulance & departed to the hospital. The departure time was 17:42 pm.

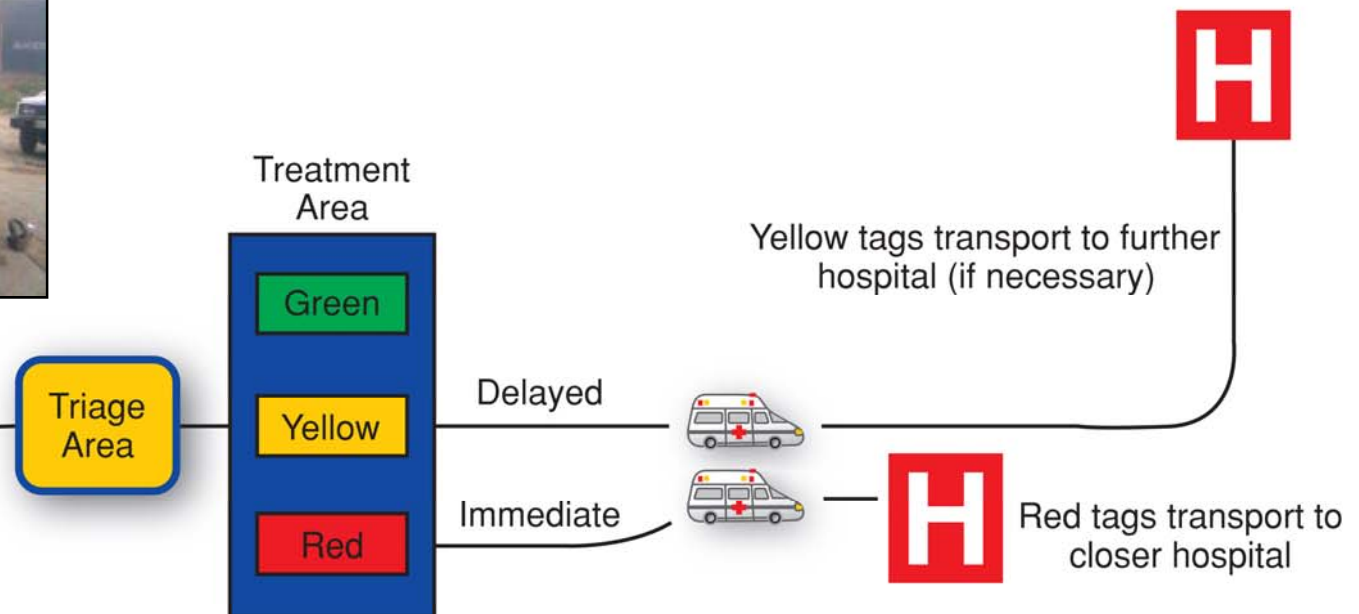
After taking the patient into the ambulance Emt Sidharth Naik checked his vitals, & gave Pt. wound care. did the ERCP confarence with Dr. Ribelo . As per the ERCP's advice she gave the patient Wound care, Inj. Diclofenac & oxygen.

Ambulance thereafter reached the hospital at 17:45 pm. Patient was admitted into P.H.C. Candolim & the admitting time was 17:47 pm. After 48 hrs follow-up patient was found out of danger.



Avilge Time	-17:29 pm	EMT - Sidharth Naik
Departure Time	17:30 pm	PILOT- Sanjay Pednekar
Scene Arrival	-17:35 pm	ERCP -Dr. Ribello
Scene Departure	-17:42 pm	D.O - Harish madhakar
Hospital Reach	- 17:45 pm	C.O- Swaynil Patkar
Admitted	- 17:47 pm	
Status	-Life Saved	

Triage Plan at Incident



Overlap with Disaster Management



Emergency Response Center (ERC):

- 24 x 7 X 365 services
- 3 digit number for easy & quick alert
- Inbuilt call surge capacity (40 K - 200 K)
- ERC with Police/ Fire Dept. network
- PRA lines (dual)
- Multi-mode communication (Cellular/ RF)
- Geo-spatial information (digital maps – Road/landmarks)
- Service organization information (hospitals, fire/police)
- ERC –special seating for MCI & Disasters

Ambulance (Land/ Boat) with

- Life support medical equipment
- Patient transport equipment
- Rescue and extrication tools
- Base location –close to community
- Response – U/ R app. 20 Mts.
- Carry 1 critical and 4 mild injury patients
- Communication facility with patient, ERCP, hospital.
- Automatic Vehicle Location Tracking
- Ability to mobilize additional fleet to scene

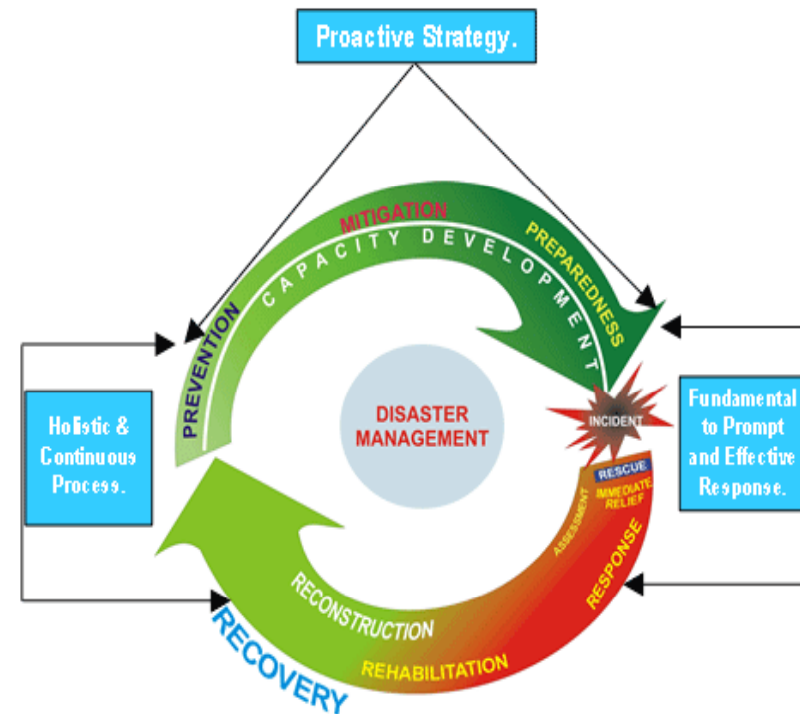
Pre-Hospital Care

- Trained Emergency Medical Technician
- Protocols to deal medical and trauma emergencies
- On-Line Medical Direction by qualified doctors 24 X7 at ERC
- Availability of Advanced Life Support Medication
- Protocols attested by Stanford School of Medicine
- Trained in Disasters and MCI
- Hospitals in Working Agreement (HWA) for Care Continuum
- Inter-facility Transfer Process
- Interception process
- Do Not Resuscitate Process
- PCR Document
- Patient Assets Documentation provision

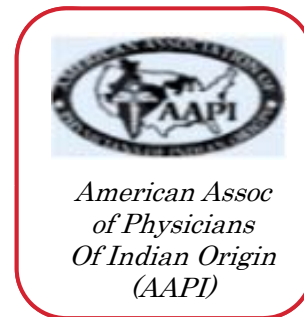
Research and Training

Emergency Medicine Learning Center (EMLC) with Simulation labs and qualified instructor teams for training community based First Responders, Basic and Advanced EMTs, Doctors and Nurses on BLS/ ACLS/ PALS/ ITLS. Disaster Preparedness exercises – Table Top, Mock Drills . Emergency Rooms in PPP at Goa Operations, Systems and Clinical Research Approach Unique On-Line Medical Research Division Indian Emergency Journal

DISASTER MANAGEMENT CONTINUUM



Collaboration for transfer of Knowledge and Technology know-how, Best practices, Research & Training

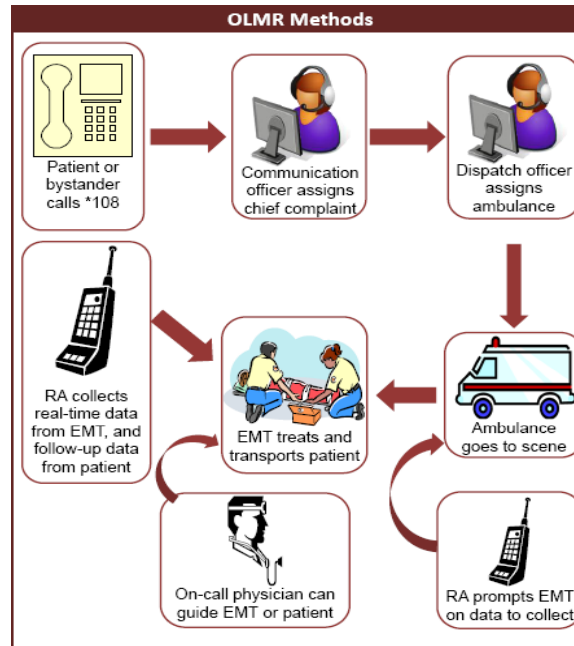


Stanford – GVK EMRI – Partnership



Emergency Care at the District Hospital

Stanford
Emergency Medicine
International



Essential Prehospital Emergency Protocols

Hyderabad/Ahmedabad, March 2011

Stanford
Emergency Medicine
International



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- IEJ is now a peer reviewed scientific Journal
- IEJ now an International publication with ISSN number
- Available in National Library, New Delhi for reference

Reasons to act on road deaths

- Nearly 1.3 million people are killed on the world's roads each year
- Up to 50 million people are injured, and many remain disabled for life.
- 90% of casualties from road deaths occur in developing countries.
- Annual road traffic deaths are forecast to rise to 1.9 million people by 2020.
- Road traffic injuries are the number one cause of death for young people worldwide.
- By 2015 road traffic injuries will be the leading health burden for children over the age of five years in developing countries.
- The economic cost to developing countries is at least \$100 billion a year.
- Road traffic injuries place an immense burden on hospitals and health systems generally.
- Road crashes are preventable.
- The deaths due to road traffic injuries would increase to the 6th rank in 2020 from the 9th rank in 1990. Similarly the ranking of DALYs lost due to Road traffic injuries would be at 3rd rank in 2020 from 9th rank in 1990.



What Next

GVK EMRI has been successfully providing the EMS in 10 states starting the services in Andhra Pradesh since August 2005. Currently a quarter of the total reported cases are injury related emergencies, which amounting to around 2500 cases per day. Death before arrival of ambulance was recorded in 2% of injury related emergencies. The absolute number the deaths is a matter of worry as GVK EMRI is witnessing more than 50 deaths and thus is strategizing to reduce the deaths during the road traffic accidents and improve the chances of survival by innovative method of Pre-Hospital Care. The Strategies of GVK EMRI for the next decade are as follows;

- Setting up of the system of Injury Surveillance in all the operating states. This would provide the Hot spots for vulnerable places of accidents. The system would interact with all stakeholders.
- On Line Medical Research team would be established in all the operating states to evaluate the Road accident victims and designing of new treatment protocol.
- Regular workshops and conferences for the community and stakeholders on the impact of GVK EMRI programme and set a platform for community participation



Courtesy: www.decadeofaction.org

GVK Emergency Management and Research Institute (GVK EMRI) was born in April, 2005 to provide integrated (medical, police and fire) emergency response services with a Vision to provide leadership to Save 1 M Lives per annum Nationally by 2011 and establish GVK EMRI as a Premier Research and Training Institute in Emergency Management in Public Private Partnership framework. Not only the poor access to emergency support is addressed by EMRI, but, telephone (108), transport (ambulance) and treatment (pre-hospital care) are provided free to the user.

Official Partners





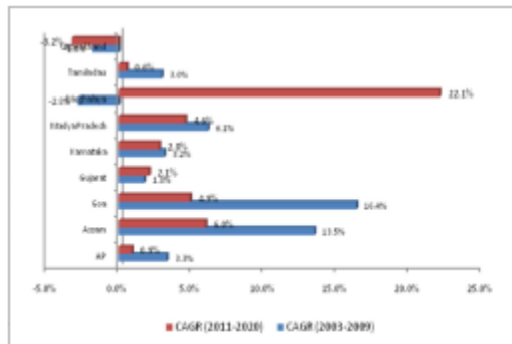
GVK EMRI has given a new face to the pre-hospital care during Injury and Road Traffic accident related emergencies in India, which is at par with the developed countries by successfully taking the challenges of resource creation, education, triage and public awareness. GVK EMRI since its inception in August 2005 has effectively addressed all those issues to improve the outcome of quality pre-hospital care.

It has developed detailed process understanding and well defined responsibilities throughout the organization

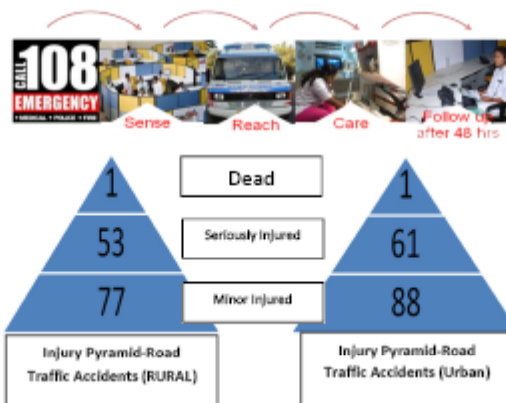
What to do to avoid possible Road Traffic Accidents?

- Research at GVK EMRI have found that the risk of accidents have gone significantly high in bad roads and in bad weather. Thus drive according to road conditions. Drive slower when the weather is bad.
- Wear your seatbelt. Not only do seatbelts keep you safe in an accident, it will help you avoid accidents as well.
- Since GVK EMRI research has found more two wheeler accidents and the proportion of Helmet users are significantly low (~8%), GVK EMRI urges the two wheeler users to use Helmet to reduce the head and neck injury.
- Watch out at intersections as many accidents happen here. Always slow down and look both ways at intersections. Don't assume the other vehicles will stop just because the light is red.
- Turn your head to check for traffic before changing lanes. Do not rely on your mirrors when making a lane change. All vehicles have "blind spots" in which your mirrors cannot see.

Growth Rate of Road Traffic Accidents up to 2020



- Though the forecasted Road Traffic Accident growth is increasing at a slower rate, organizations like GVK EMRI would create further opportunities to reduce the mortality rate
- States like Meghalaya, Assam, Goa and Tamilnadu would be under special surveillance



Though the incidence rate of injury related events are more in rural areas than in urban areas (NSSO, 60th Round), the severity is much higher in urban areas. One death in the road traffic accidents results 61 severely injured and 88 minorly injured in urban areas. These numbers are less in rural areas.

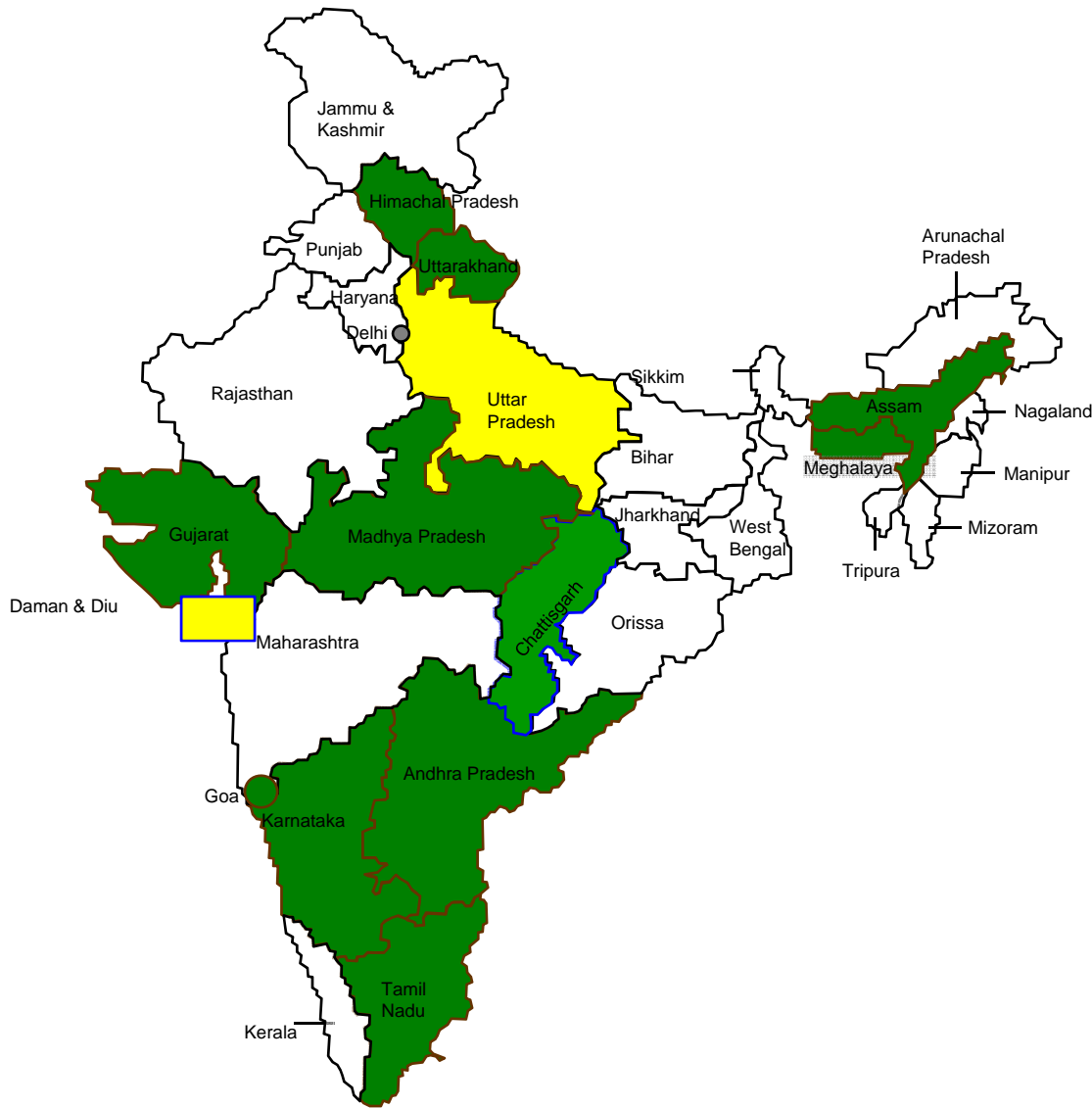
Source: GVK EMRI

GVK EMRI Research on Road Traffic Accident

- Head and neck injury is the most common injury (41.73%) recorded among the two wheeler accident
- By ensuring the response time within 15 minutes in most of the cases, EMRI could reduce deaths by 67%



Launched on 15th Aug, '05 in Hyderabad and expanded to 11 other States, 2 UT's



What worked for the GVK EMRI EMS Model?



Strengths

- Not burdened by legacy technology, processes or people
- Indigenously developed cost-effective technology including well designed and equipped ambulances
- KPIs Matching World Class Standards
- Public Private Partnership model of organization

Aspiration to save over 1.0 million lives a year by 2015*

Aspirations

- Provide emergency management services in all states
- Provision of critical value added services to plug deficiency in Government services
- Extend the 20% reduction in RTA, MMR and other life saving benefits to the most needy

* Defined as lives that would have been lost without EMRI intervention and stability in patient's condition beyond 48 hours of emergency; Assumes 25% of emergencies serviced by EMRI and 3 lives saved for 40 medical emergencies attended to by EMRI

Source: GVK EMRI

Uniform Network of Emergency Medical Services Systems- Essential Considerations.....

1. Emergency number should be a three-digit number so that it is easy to remember **108 in India**
2. Unify emergency number for medical, police and fire emergencies....**highly relevant to road safety**
3. Network call center (Emergency Response Center -ERC) through land and mobile numbers....**all telecom service providers**
4. ERC should co-locate medical/police and fire dispatchers...**ERO & PDO**
5. Integrate Telecom and Information Technology sink with each other....
Generation of automatic Unique Emergency ID (Computer Aided Dispatch)
6. Make sure RTA location identification ability is available using GIS/GPS **permissions/ security/ safety.**
7. Ensure voice recording of calls at ERC..... **potential evidences**
8. Establish connectivity between ERC and emergency vehicles ...**Land, Boat, Train and Air ambulances; Motor cycles; MCI vehicles; Mobile hospitals.**
9. Locate Ambulance base on historical data..... **Hot-spot analysis of RTAs.**

Uniform Network of Emergency Medical Services Systems- Essential Considerations.

10. Ensure, availability of qualified medical professionals for medical direction at ERC..... Value addition in the form of On-Line medical direction, medical audit, quality of care.
11. Ensure SOPs for emergency medical validation, pre-arrival instructions, IFT etc.destination determination, referral criteria, response times
12. Develop Protocols for individual, MCI and Disasters.....Control, Coordination and Communication functions of EMS and DMS
13. Network hospitals and hospital ED rooms.....empanelment, accreditation, Handover process and integration.
14. In-built analytics and quality teams in ERC..... Journey of improving efficiencies and effectiveness.
15. Invest in Capacity building and R &D..... for improvements in in efficiencies and effectiveness

To Conclude

- “If you have saved one life in your entire lifetime, your life is a success”
- Dr. A. P. J. Abdul Kalam
(Hon. Ex President of India)





THANK YOU

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