108 Emergency Response Services – India

Resuscitation Academy (Sept. 2016) Singapore

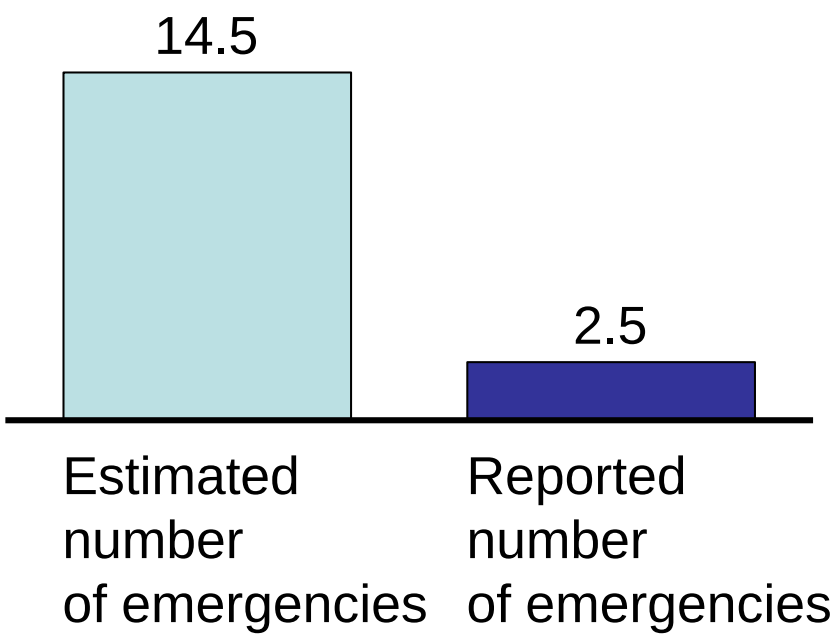
Dr G. V. Ramana Rao MD DPH PGDGM
Director Emergency Medicine Learning Centre & Research
GVK Emergency Management and Research Institute

ONLY 20-25% EMERGENCIES GET TREATED IN INDIA - 2005

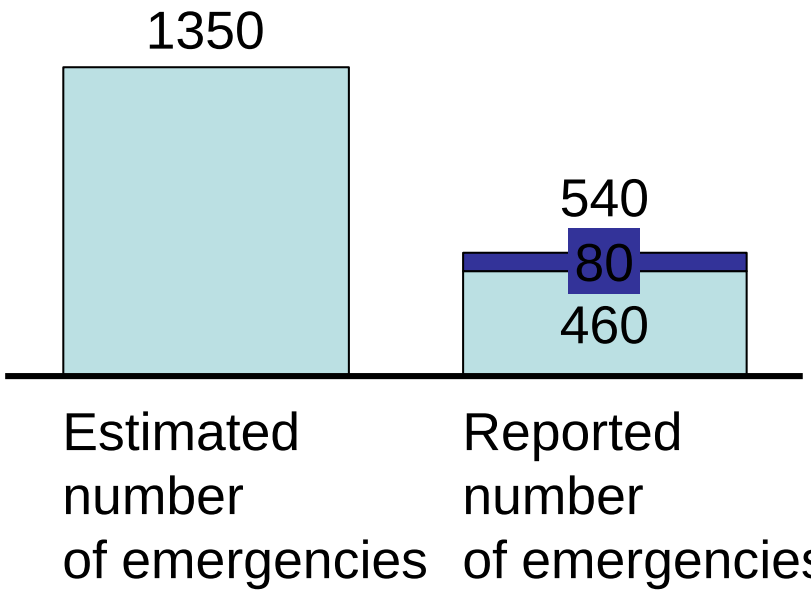
REPRESENTATIVE

Sample set

17% emergencies reported in rural areas



40% emergencies reported in leading metro



INDIA HAS AN ESTIMATED **300,000**
MEDICAL, CRIME AND FIRE EMERGENCIES EVERY DAY...

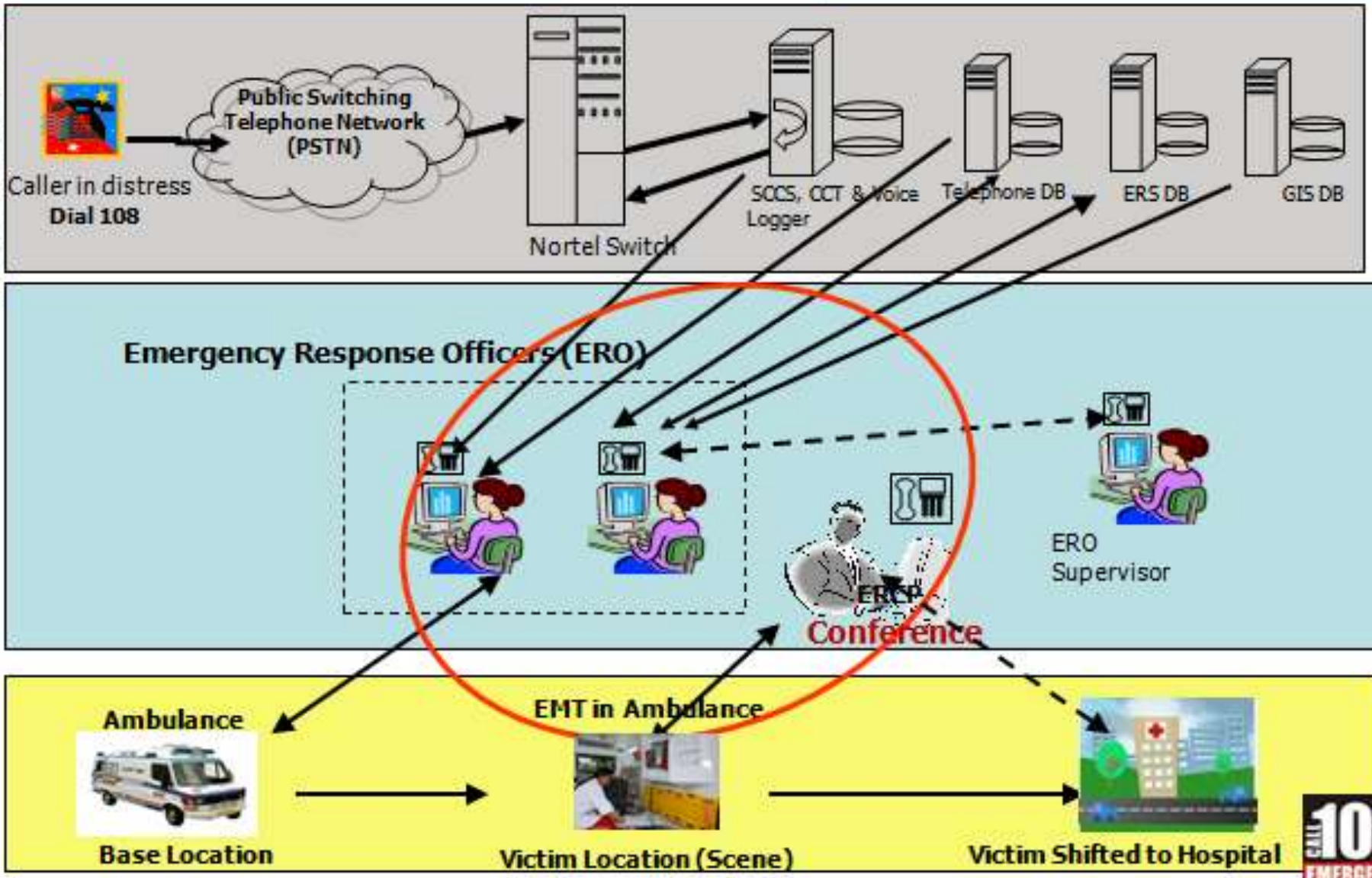
MANY LIVES ARE LOST BECAUSE OF LACK OF IMMEDIATE MEDICAL ATTENTION, TRANSPORT OR ACCESS TO ANY FORM OF HELP.

108

Sacred and significant in
Hinduism, Islam, Buddhism, Sikhism and Jainism

INNOVATIVE USE OF TECHNOLOGY

Tech Mahindra



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


108
GVK
AMBULANCE

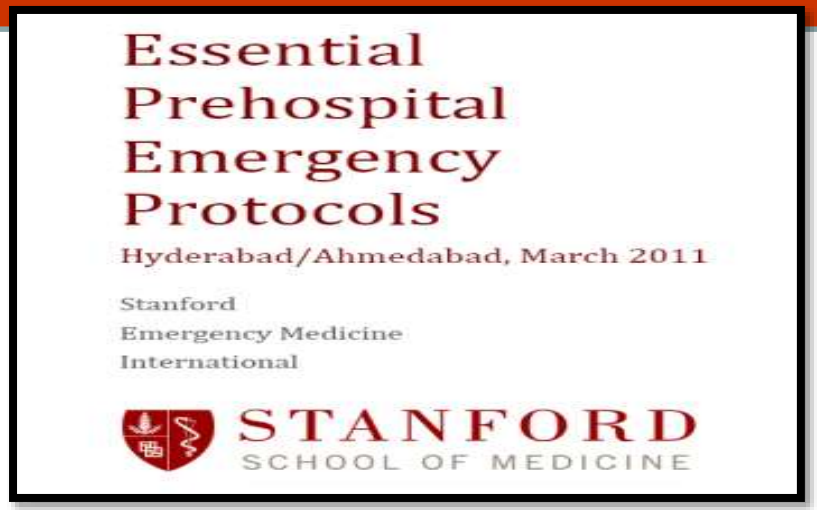
Innovative Pre-Hospital Care

- Emergency Medical Technician (EMT) in the ambulance is trained not only to provide pre-hospital care but also to handle emergency situations
- EMT gets support over phone from qualified medical practitioner called ERCP (Emergency Response Centre Physician) located at the ERC
- ERCPs are in the ERC round the clock to provide support to EMT and to people at emergency scene until ambulance arrives

Innovative Process

- Developed detailed process understanding and well defined responsibilities through out the organization
- Maintained all information related to emergency in Patient Care Records (PCRs)
- Patient information is shared with the hospital on arrival
- 48 hour follow up with the patients admitted to hospital

Pre Hospital Protocols…



Essential Prehospital Emergency Protocols

Hyderabad/Ahmedabad, March 2011

Stanford
Emergency Medicine
International

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SCHOOL OF MEDICINE

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We would like to extend our gratitude to the GVK EMRI staff (ERC physicians, EMT educators and EMTs) that provided their expertise and feedback during the development of this protocol manual.

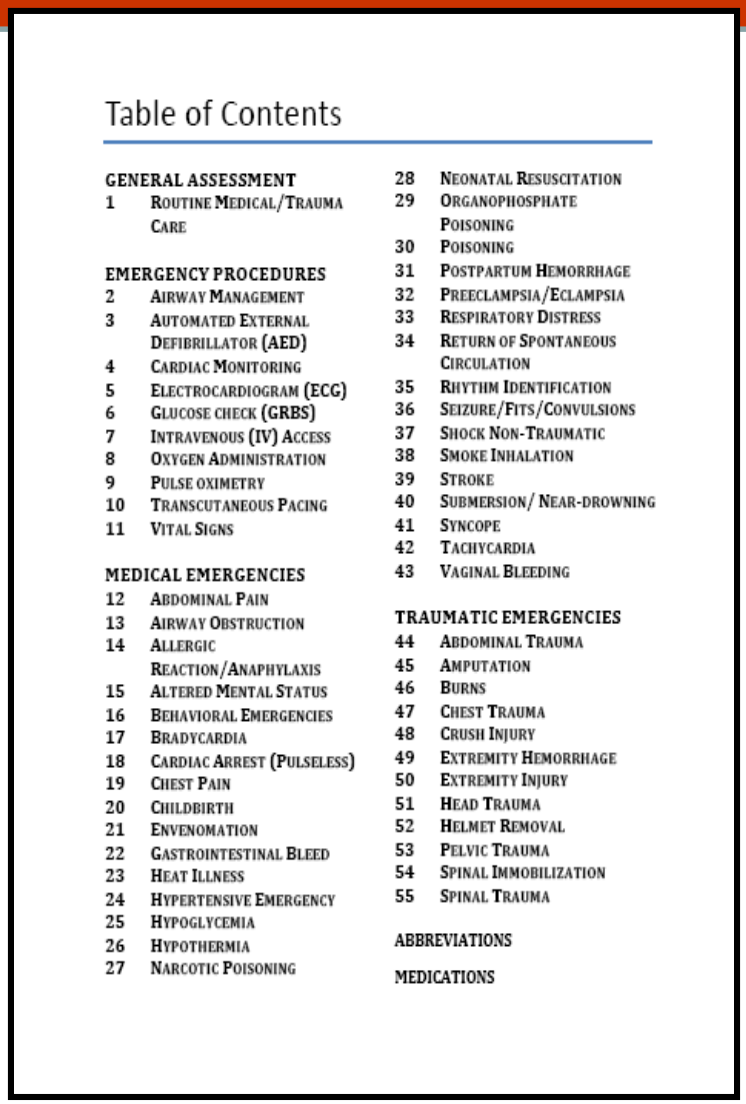
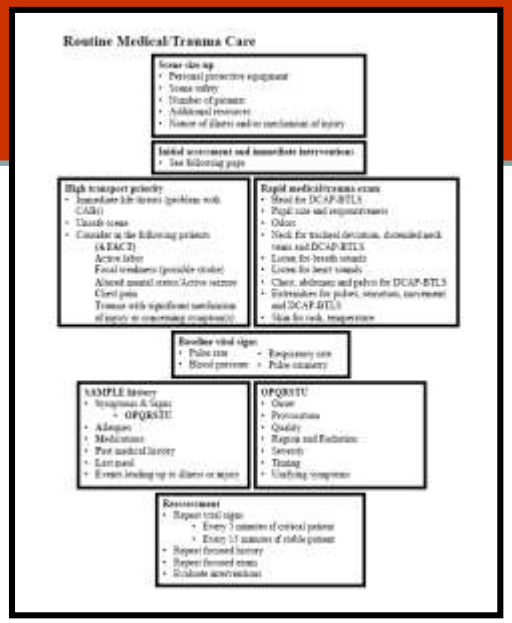
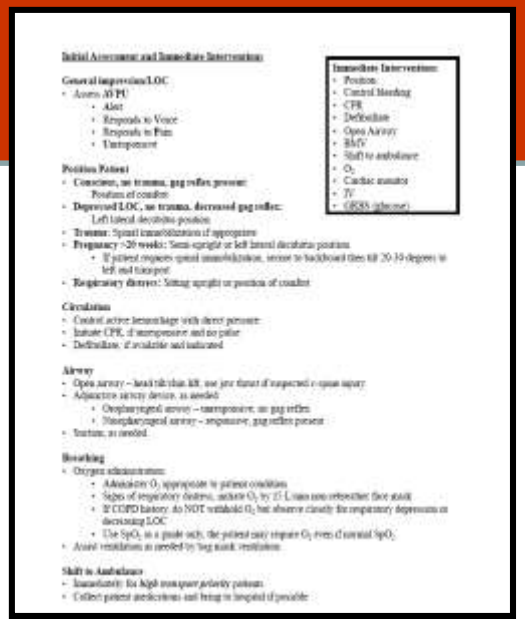
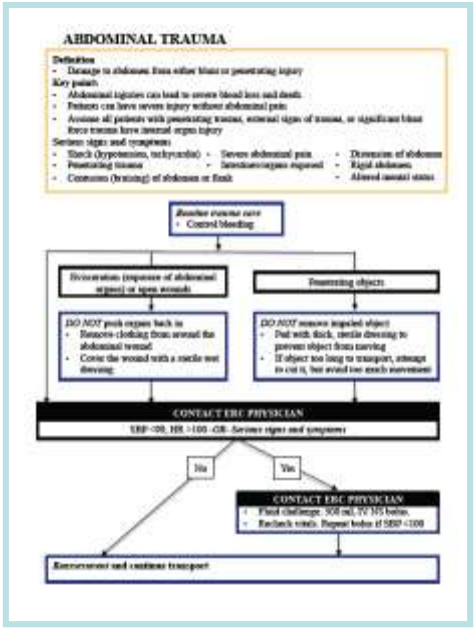


Table of Contents

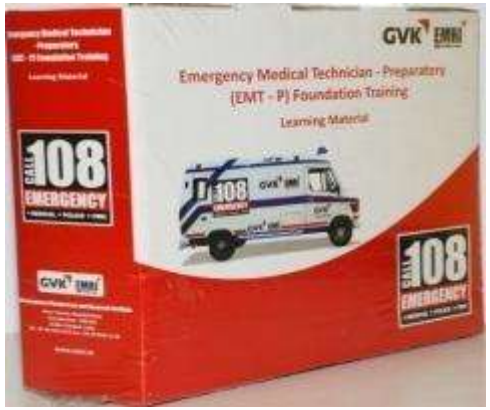

Routine Medical/Trauma Care
Scene size up
Initial assessment and immediate interventions
High transport priority:
Rapid medical/trauma exam
Baseline vital signs:
SAMPLE history
OPQRSTU
Reassessment

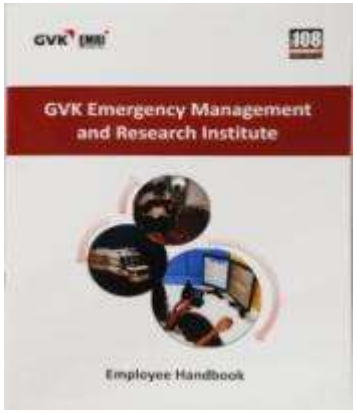

Initial Assessment and Immediate Interventions
Immediate Interventions:
General impression/LOC
Position Patient
Circulation
Airway
Breathing
Shift to Ambulance

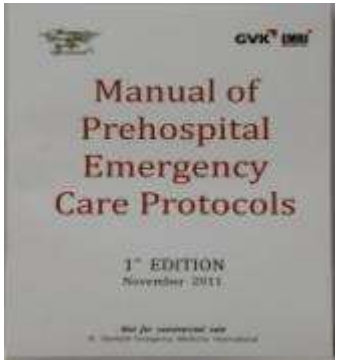

ABDOMINAL TRAUMA
Definition
Key points
Serious signs and symptoms
Baseline trauma care
Control bleeding
Evisceration (exposure of abdominal organs) or open wounds
Penetrating objects
DO NOT push organs back in
Remove clothing from around the abdominal wound
Cover the wound with a sterile wet dressing
DO NOT remove impaled object
Pad with thick, sterile dressing to prevent object from moving
If object too long to transport, attempt to cut it, but avoid too much movement
CONTACT ERC PHYSICIAN
No
Yes
CONTACT ERC PHYSICIAN
Reassessment and cautious transport


ERC PHYSICIAN
Key points
Prehospital management options
Pain control
Prolonged transport or in hospital management options
Pediatrics
Key points
Treatment of evisceration
References

Training Kit – Foundation EMT








GVK EMRI
Emergency Medical Technician - Refresher
(EMT-R) Training Learning Material
CONTENTS OF THE KIT
EMT (R) POCKET BOOK
MEDICAL EQUIPMENTS MAINTENANCE MANUAL(PART II)
SOFT SKILL MANUAL (PART II)
COMPLETION CERTIFICATE
Control Number: EMT_R_201_ / 0077
CALL 108
EMERGENCY
MEDICAL • POLICE • FIRE


GVK EMRI
EMERGENCY MEDICAL TECHNICIAN
(PREPARATORY)
POCKET BOOK
Pre Hospital Care ... at a glance
108
EMERGENCY


GVK EMRI
EMERGENCY MEDICAL EQUIPMENT
MAINTENANCE & REPAIR
MANUAL


GVK EMRI
Soft Skills for
Affectionate Life Saviours
Developing soft skills to accomplish the mission of saving lives
Fill in Your
Soft Skills Gaps
With love,
from an affectionate Life Saviour


GVK EMRI
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EMERGENCY
CERTIFICATE OF COMPLETION
Awarded to
EMT Mr. / Ms.
(Name)
For successfully completing
Emergency Medical Technician - Refresher (EMT-R) Training
From To
EMT_R_201_ 0077

Emergency Response Centers

State	Date of Launch	No of yrs Of Exp.	Seats in Call Center
Andhra Pradesh	15th Aug 2005	> 10 Years	100
Telangana	15th Aug 2005	> 10 Years	
Gujarat	29th Aug 2007	> 8 Years	62
Uttarakhand	15th May 2008	> 7 Years	32
Goa	5th Sep 2008	> 7 Years	15
Tamilnadu	15th Sep 2008	> 7 Years	85
Karnataka	1st Nov 2008	> 7 Years	74
Assam	6th Nov 2008	> 7 Years	80
Meghalaya	2nd Feb 2009	> 7 Years	28
Madhya Pradesh	16th July 2009	> 6 Years	50
Himachal Pradesh	25th Dec 2010	> 5 Years	24
Chhattisgarh	25th Jan 2011	> 5 Years	48
D&NH and Daman & Diu	10th April 2012	> 3 Years	6
Uttar Pradesh	14th Sep 2012	> 3 Years	300
Rajasthan	4th June 2013	> 2 Years	50
Arunachal P	16th Nov 2013	> 1 Year	12
National			966

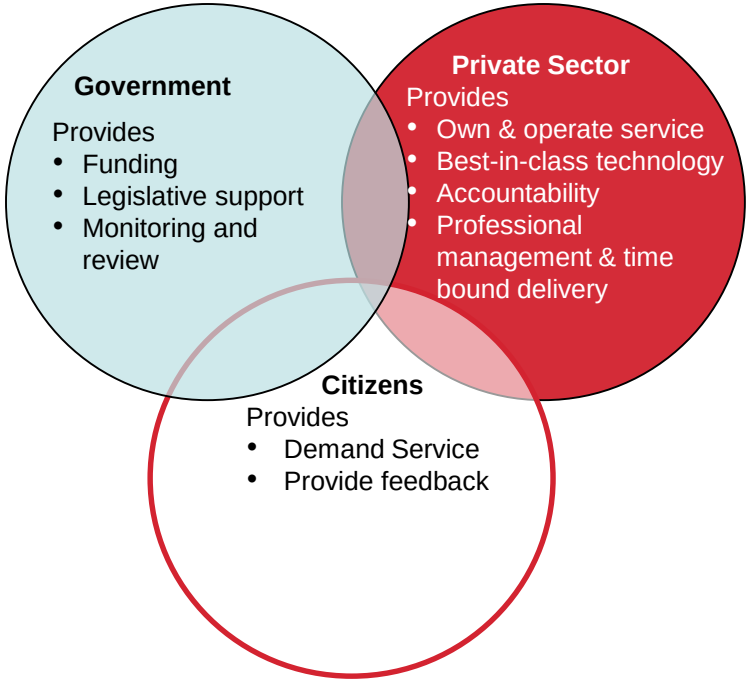
- Overall, more than 100 years of experience of running Call Centers and Computer Aided Dispatch(CAD)

Launched on 15th Aug, '05 in Hyderabad and expanded to 2 Countries

In India 15 States and 2 Union Territories, In Sri Lanka 2 Provinces

GVK EMRI FOOT PRINT

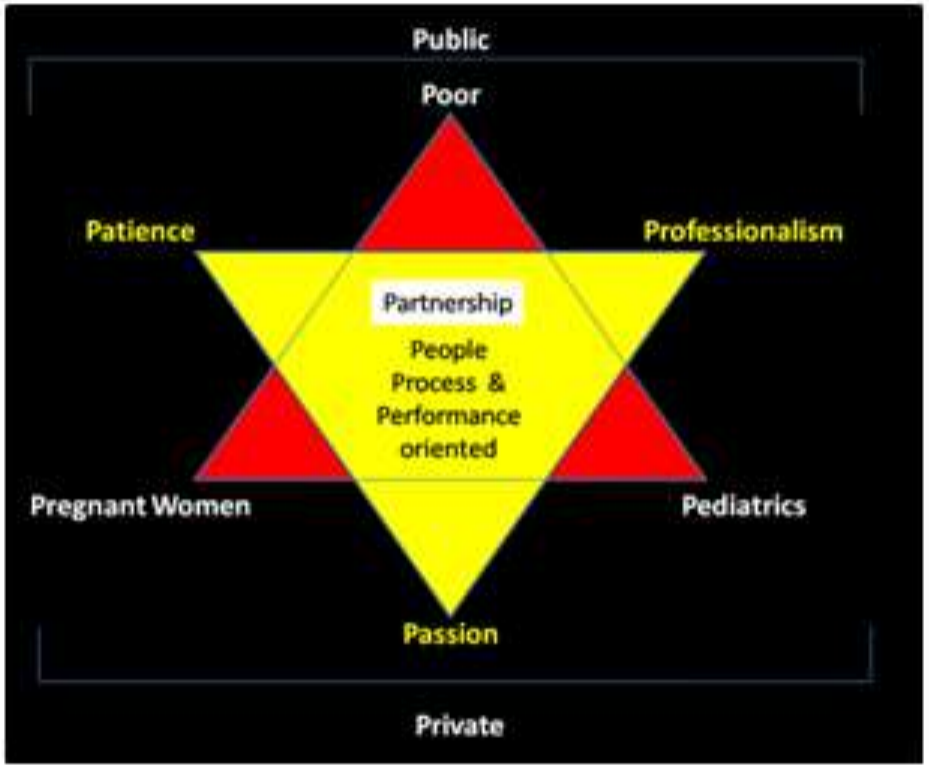
Population covered:	750 M
Emergencies attended:	47 M
Ambulances:	10,697



Public Private Partnership (PPP) in Emergency Management

Successfully Implemented by GVK EMRI in PPP Framework

- **P**olitical will, **P**ublic Servants' commitment and **P**ublic Support
- Direct Capital and Operational cost by Government (Public)
- GVK funds Leadership, Innovation (Infrastructure, Process), Collaborations, Research and Training, Knowledge transfer and Quality assurance
- Tech Mahindra provides free IT solutions as technology partner
- GVK EMRI manages and leverages government resources for better outcomes to serve poor



What worked for the 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 2020*

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

Collaborations

STANFORD SCHOOL OF MEDICINE

- Pre-Hospital Care Protocols
- District Hospital Physician Program (DHPT)
- Paramedic education
- Instructor Development / CME / OLMR

ITLS International Trauma Life Support

- Provider - Basic and Advanced
- Instructor Courses
- Global Development Committee member
- Best trauma case for annual global meet
- Indian publication of Manual

American Heart Association. Learn and Live.

- BLS/ ACLS/ PALS – Provider and Instructor Programs
- Invitation to 2010 guideline dissemination, USA
- Regional faculty
- Quality conceptualization
- invitation to Bangladesh first AHA course

AAFP **ALSO**

- ALSO - Provider and Instructor course
- BLSO- Provider and Instructor Course
- Joint paper in International conference
- Invitation to Ethiopian ALSO

Maastricht University

- Student Exchange program
- Faculty exchange program
- Joint research

Fachhochschule Köln
Cologne University of Applied Sciences
Fakultät für Anlagen, Energie- und Maschinensysteme

- International internship spots
- AIIMS / GVK EMRI/ CU studies of EMS

INDIAN COUNCIL OF MEDICAL RESEARCH · NEW DELHI · ICMR

STEMI INDIA CHARITABLE TRUST
SERVICE AGREEMENT FOR TAMIL NADU STEMI PROGRAM

ADITYA BIRLA GROUP

phfi
Public Health Foundation of India

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

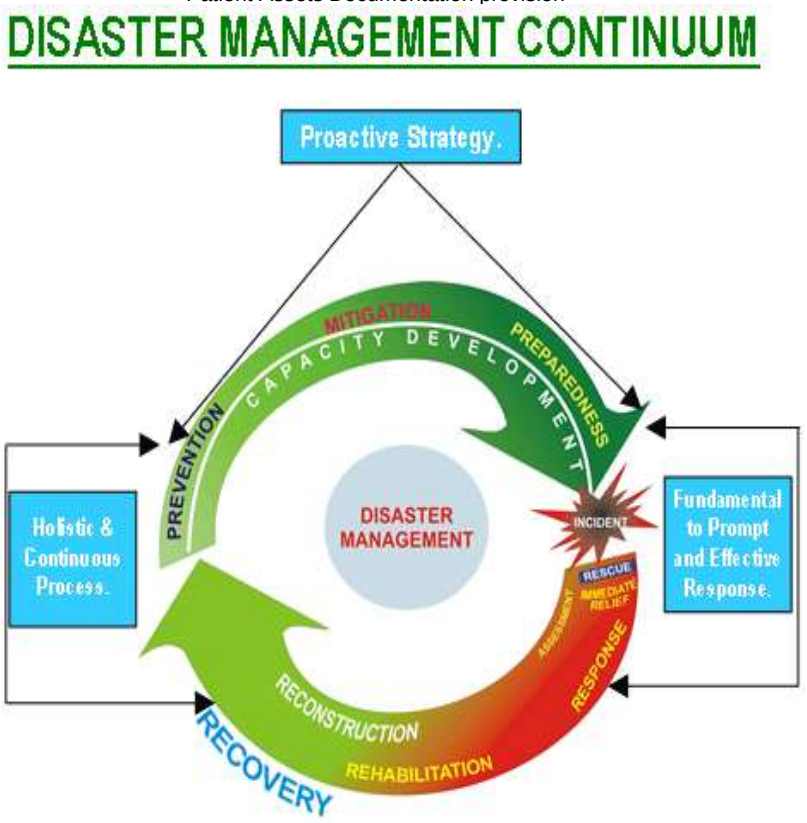
Ambulance (Land/ Boat) with
- Life support medical equipment
- Patient transport equipment
- Rescue and extrication tools
- Base location –close to community
- Response – U/ R app. 20 Mts.
- Carry 1 critical and 4 mild injury patients
- Communication facility with patient, ERCP, hospital.
- Automatic 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



Delivery by the candle light
(By EMT under Medical Direction)

EMERGENCY MANAGEMENT INFRASTRUCTURE CAN ALSO BE LEVERAGED IN DISASTER MANAGEMENT SITUATIONS

May 18 blasts, Hyderabad

- Bomb blasts at Mecca Masjid area in Hyderabad injuring 40 and killing 12
- EMRI deploys ambulances immediately after the first call
- Victims transported by EMRI to local private and government hospitals with treatment on the way

"EMRI took off a lot of the burden from our shoulders by arriving on time and taking up the responsibility of getting the injured persons to hospitals."

- Government of Andhra Pradesh

"I reached the hospital on the 108 ambulance… the person on the ambulance removed a splinter from my arm"

- Victim

Trauma Vehicular 12.1% (Mean age– 33 Y)

May'16 - AP

Age (%)						
Age	Male			Female		
	U	R	T	U	R	T
0-4	0.17%	0.58%	0.65%	1.20%	1.10%	4.00%
5-9	0.56%	1.00%	0.65%	2.20%	1.79%	4.00%
10-14	1.76%	1.52%	1.95%	1.80%	3.44%	8.00%
15-19	6.27%	6.40%	11.04%	6.59%	5.10%	14.00%
20-24	12.75%	12.95%	20.13%	7.58%	8.95%	12.00%
25-29	15.92%	16.02%	22.08%	11.18%	10.33%	6.00%
30-34	12.83%	11.56%	15.58%	9.18%	10.47%	8.00%
35-39	13.05%	13.28%	11.69%	12.18%	12.12%	4.00%
40-44	10.26%	10.01%	5.19%	11.78%	10.33%	12.00%
45-49	7.98%	8.46%	5.19%	8.98%	9.92%	10.00%
50-54	7.55%	6.27%	3.90%	5.39%	6.61%	10.00%
55-60	6.01%	7.56%	1.30%	11.78%	11.29%	6.00%
>60	4.89%	4.39%	0.65%	10.18%	8.54%	2.00%

Social Status (%)			
Social Status	U	R	T
BC	23.3%	5.4%	23.6%
OC	46.2%	12.3%	45.6%
SC	25.7%	19.7%	25.6%
ST	4.8%	62.6%	5.2%

	Urban	Rural	Tribal
White	97	98	98
Pink	3	2	2

Survival Status (%)			
	U	R	T
Survived	100	100	100
Expired	0	0	0

Gender (%)			
	Urban	Rural	Tribal
Male	82	81	76
Female	18	19	24

Response Time (%)			
Time	Urban	Rural	Tribal
<15	65	47	45
15-20	16	15	14
20-25	10	14	11
25-30	5	9	9
30+	4	15	21

Urban - 41 %

Rural- 56%

Tribal – 3 %

Trauma Vehicular/ lakh population in Top 5 districts

Top 5 districts	
CHITTOOR	29.29
GUNTUR	27.39
KRISHNA	27.00
EAST GODAVARI	23.10
WEST GODAVARI	20.48

Trauma Vehicular/ lakh population in Bottom 5 districts

NELLORE	16.55
ANANTAPUR	15.77
KURNOOL	12.84
SRIKAKULAM	9.48
VIZIANAGARAM	9.13

S. No.	Description	National Daily Report 30th August 2016
1	Demographic Particulars	
a	No of districts covered/ Total districts	372/372
b	No of sub-districts covered/Total Sub-districts	3270/3277
c	No of Cities > 1 lakh Popu. covered/Total cities	292/292
d	Number of Villages covered/Total villages	377571/378536
f	Population covered by GVKEMRI	750,853,165
g	Area (in Sq.KM) Covered	2036211
2	Call Details	
a	Total Calls Answered	158,425
d	Total Calls Answered (Since Inception)	465,450,090
3	Emergency Details	
a	Emergencies (Med + Pol + Fire)	26,788
d	Emergencies (Med + Pol + Fire) (Since Inception)	47,395,856
4	Ambulance Details	
a	No. of ambulances	7,118
b	Emergencies/ Ambulance/ Day	3.8
c	Population Covered by a Ambulance	97,900
d	Area (in Sq.km) covered by a Ambulance	286
e	Emergencies/ Lakh Population/ Day	3.8
5	Top Emergencies	
a	Pregnancy related	8,880
b	Pregnancy Related (Inception till Date)	15,986,091
c	Trauma (Vehicular)	2,936
d	Trauma (Vehicular) (Inception till Date)	6,151,694

Impact

Type of Emergencies and Lives saved	• Pregnancy related - 35%, Vehicular Trauma – 12%, Acute Abdomen – 13% Cardiac – 4%, Respiratory – 4%, Suicidal – 4%, Animal Bites 2% • 907 lives were saved per day (**18.55 lakhs**) and 26,710 victims per day received timely, high-quality pre-hospital care • 142 deliveries assisted by EMTs everyday (**4.38 lakhs**)
Costs	• Cost effective services provided in 15 States and 2 Union Territories
Qualitative Outcomes	• Angel of Mercy – 108 Ambulance • Successful PPP • Well documented systems, impressive EMT training, high order management competence • A historic landmark in health care delivery system • Built more trust in the health system as a whole • Increased institutional deliveries and reduced maternal mortalities by 20 – 25% • A model for replication across the Country in any state

GVK EMRI

Reaching the unreachable

108 EMERGENCY

Neonatal Care

Neo Natal Ambulances are launched in order to ensure emergency transfers for very sick babies who require more specialist treatment at another hospital and also for elective or 'back' transfers to transport recovering babies back to the hospital nearest to their homes. It is primarily launched to reduce the Infant Mortality Rate as a part of Millennium Development Goals. This specialised service is operated in Tamil Nadu and Goa as part 108 Emergency Response.

Inter Facility Transfer (IFT)

The objective of these ambulances are to provide timely transportation to patients who require next level of medical treatment in higher healthcare facility This facilitates an integrated and comprehensive health care management providing high-end ambulatory transportation for appropriate care.

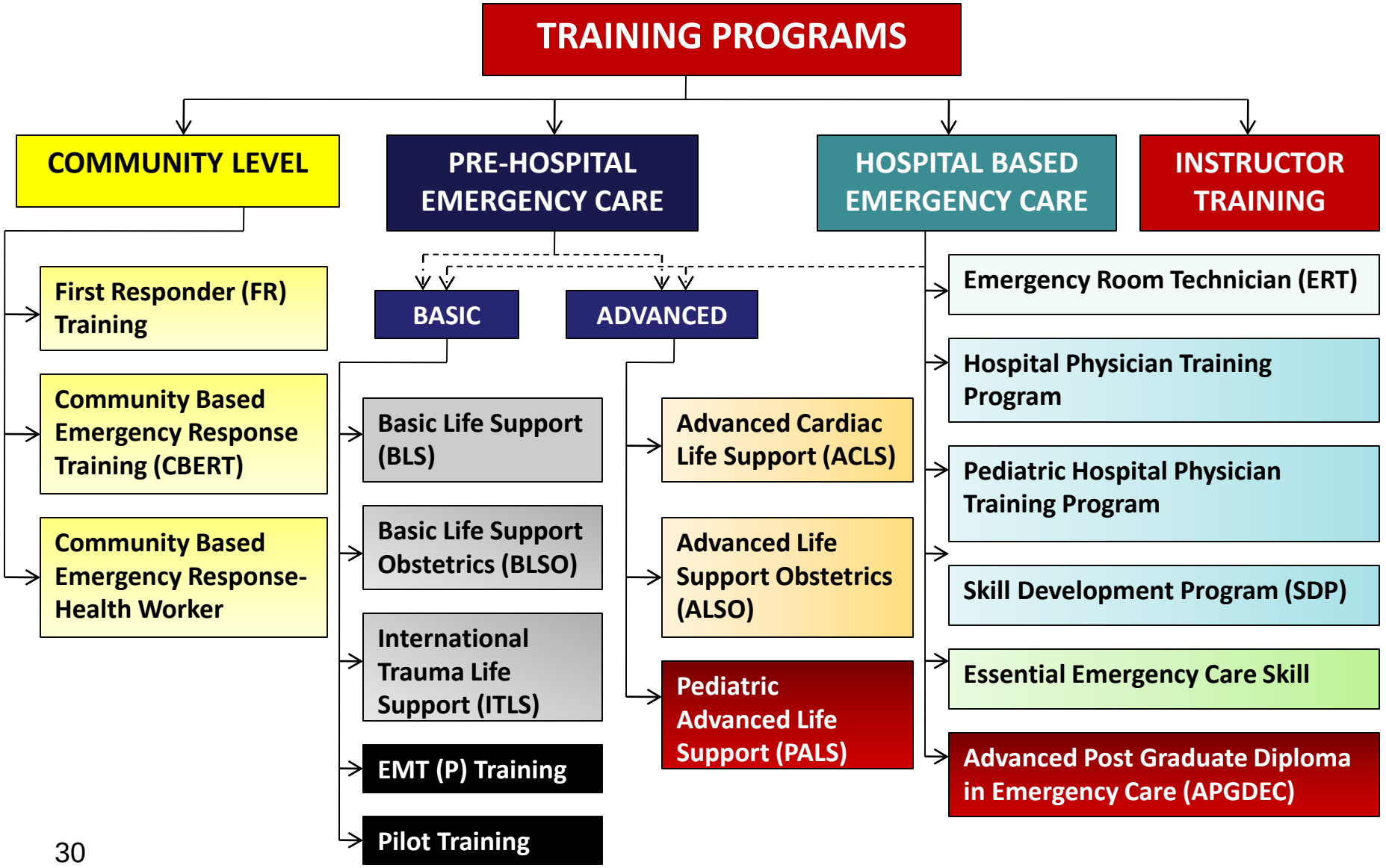
While 437 dedicated inter facility transfer ambulances as operated in Assam, special initiative in some other states some ambulances have been dedicated for this purpose as part of 108 Emergency Response Service.

Emergency Stabilization Centres

The role and mission of ESC is to provide stabilization to patients/victims in the Golden hour and ensure safe transport to the nearby tertiary hospital for definitive care. These ESCs will ideally be located closer to accident hotspots and also in geographies where facilities to treat medical emergencies are poor or don't exist. The choice of location is supported by authentic data, culled out from the databases of GVK EMRI and Road Accident Data Management Systems (RADMS).

GVK EMRI Operates Emergency Stabilisation Centres in the states of Goa and Tamil Nadu.

Capacity Building – for entire chain of Survival



Focused Training Programs

AAFP American Academy of Family Physicians GVK EMRI

ADVANCED LIFE SUPPORT OBSTETRICS(ALSO)

GVK EMRI is a not-for-profit organization established in 2005. GVK EMRI provides integrated '108' emergency response services in Public Private Partnership (PPP) model to over 750 Million people in India. GVK EMRI envisions to respond 30 Million emergencies and save 1 Million lives annually.

To bolster the quality of emergency care, GVK EMRI is resolutely taking forward initiative to extend and spread education and training in emergency care for spectrum of health care professionals and community level response personnel involved in emergency response and care. GVK EMRI ensures best education environment that fosters and stimulates learning of skills, knowledge and attitude to respond to an emergency situation and patient, effectively and efficiently. Contemporary learning methodologies, such as simulation with manikins and hands on practice are the foundation of GVK EMRI training & provide unique experiential learning opportunity to every single participant of training program. GVK EMRI strives to impart training at par with global standards of education and learning by partnering with best institutes in the world.

The AAFP is authorised owner of ALSO Program and its copyright from the University of Wisconsin GVK EMRI is the first and the only International Training Centre in India for ALSO. Currently ALSO is held in 62 countries. ALSO cource is two day training detailing about management of potential obstetric emergencies during perinatal and post natal period. ALSO program helps the physicians and other health care providers to develop and maintain the skills and knowledge to effectively manage obstetric emergencies. This program additionally serves as an aid for training residents in obstetrics, family medicine as well as General Practitioners.

The course content is as follows:

- Safety in maternity Care
- Labor Dystocia
- Shoulder Dystocia
- First trimester complications
- Vaginal Bleeding in late pregnancy
- Preterm Labor / Premature Rupture of Membranes
- Maternal Resuscitation /Postpartum hemorrhage
- Assisted Vaginal Delivery
- Instrumental deliveries (Forceps, Vacuum)
- Mal-presentation
- Medical Complications in pregnancy
- Intra-partum Fetal Surveillance
- Mega-delivery Practice
- Obstetric Case Discussions
- Neonatal Resuscitation

Methodology:

- Audio-visual classes
- Skill Stations
- 1 : 1 student manikin ratio
- Written test and practical skill assessment
- Team Dynamics

Benefits

To the Participant

- Gains skills and knowledge related to obstetric emergencies
- Deals with complications related to antenatal, natal and postnatal stages
- Learns step wise assessment based management in neonatal as well as maternal resuscitation
- Learns universal techniques to manage obstructive labor
- Valid certification and ALSO provider card

To the Organization

- Various levels of health care providers will be able to provide advance obstetric care
- Reduced maternal and neonatal mortality and morbidity
- Staff will be oriented to current obstetric care practices

To the Community

- Effective reduction in MMR, IMR
- Builds trust in the community with regards to health care facility
- With reduced IMR communities adopt small family norms



100K FIRST RESPONSE

What is Unique in this Innovation ?

- Integrated Emergency Response Services for Medical, Police and Fire emergencies with single universal toll-free number '108'
- Free services (no cost to citizen)
- PPP framework
- Private Partner brings leadership, innovation, execution and technological capabilities
- Conducting Research and building capability in Emergency Medicine and Management

GVK EMRI

A Gandhian Innovation that Synthesized Technologies

Harvard Business Review
www.hbr.org
July-Aug 2010

A few Indian pioneers have figured out how to do more with fewer resources—for more people.

Innovation's Holy Grail

by C.K. Prahalad and R.A. Mashelkar

" Combined cutting edge technologies (telecom, computing, medical and transportation) to create new capabilities for the first time in the World Scaled rapidly keeping costs low with Public Private Partnership (PPP) Drawn on the knowledge base of specialized institutions overseas and set the standards in India and developed unique research capabilities"

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