



**Report on the Pre-Hospital Emergency and Paramedic  
Feasibility Study in India**



**By:**

**Global Health Alliance UK**

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## 1. Introduction

This report has specifically been put together in relation to Emergency Medical Services in India, with special reference to the Emergency Medical Technicians (EMTs) and Paramedics situation. The aim of this report is to highlight the importance and need of EMTs and paramedics, especially in a country as big and vast as India. However, this issue cannot be discussed without first putting it into context of India's growing population and the rate/percentage of deaths and accidents that happen on India's roads every year.

According to the World Health Organisation (WHO) website, India's total population in 2015 was estimated to be about 1,300,000,000. Several reports have lately indicated that due to the higher population growth of India, the population difference between India and China is coming down quickly and that it is estimated that by 2030 India will become the most populous country in the world.

Also, considering that emergencies and accidents are common in all parts of India and thousands of people are injured or die in road traffic accidents every year, the importance of the role of an effective EMS is further exacerbated. According to a very recent article written by Anisha Bhatia in December 2016 over 1.3 million deaths in road accidents have been recorded in the last decade in India. The article also stated that in terms of numbers, India has more road accidental deaths than anywhere else in the world where *one person dies in a road accident every four minutes*. The National Crime Records Bureau (NCRB) has also reported that the number of pedestrian deaths in road accidents in the country has risen from 7,088 in 2015 from 6,690 in 2014. The White Paper on Academic Emergency Medicine in India: INDO-US Joint Working Group (JWG) published in 2008 also stated that World Health Organization has projected that *by 2020 road crashes will be a major killer in India, accounting for 546,000 deaths*.

Furthermore, to put things into perspective it is also imperative to highlight that in addition to the above issues, there is also a massive shortage of health professionals in India. A report published by the Public Health Foundation of India (PHFI) stated that a shortage of 6.4 million allied health professionals has been estimated in India and in view of the fact that India's population is estimated to grow many folds in the

coming years, it is only expected that unless great efforts or measures are taken, this gap will dramatically widen in the coming years.

The Emergency Medical Services in the context of the above highlighted issues, remains fragmented to make it extremely difficult to cope with the above situation.

### **Emergency Medical Services (EMS)**

Emergency Medical Service forms an integral part of the public health care sector in India and its primary function is to deliver emergency medical care to the people in all emergencies including disasters. EMS “refers to the treatment and transport of people in crisis health situations that may be life threatening. Emergency medical support is applied in a wide variety of situations from car accidents to drowning to incidents of heart attack”. <https://www.ems1.com/careers/articles/1058440-What-is-EMS-A-Definition/>

Global Health Alliance (GHA) aims to deliver up-to-date short accredited courses and programs for health professionals such as doctors, nurses, specialist nurses, paramedics, cardiac physiologists & general public and consists of team of experts from renowned universities and hospitals from across the UK. As stated above, in view of the fact that such high numbers of death happen in traffic accidents in India, we cannot also disregard the role of lack of effective and quick EMS in India especially the ambulance service and the role of paramedics. **Currently there is no national, unified, comprehensive and effective pre-hospital care system in India and what is available is fragmented, disjointed and inaccessible.** In addition to this, there is also no countrywide uniform ambulance number to call on in case of an emergency. *In the absence of pre-hospital emergency care personnel unskilled people attempt life-saving tasks and 30% of emergency patients in India die before they reach a hospital.*

The White Paper on Academic Emergency Medicine in India: INDO-US Joint Working Group (JWG) published in 2008 also highlighted that “India lacks a responsive and time-sensitive Emergency Medical System (EMS) and that the Emergency services are run by a multitude of organizations including government, police, fire brigades, hospitals and private agencies, with little coordination among

them. Private hospital ambulances operate on a strictly fee-for-service basis and that trained Air Ambulance services are not available. In rural areas, patients are often transported to a health care centre in tractor carts or bullock carts. **The paper also talked about Ambulances often being little more than transport vehicles and that Personnel with minimal or no medical training staff these vehicles.** Over 80% of accident victims do not achieve access to medical care within one hour of the incident. In a lot of instances bystanders usually perform pre-hospital care, including patient transport.

Also, due to a lack of any categorization of hospitals, emergency victims are often taken to the nearest facility, regardless of its capabilities to treat that emergency. **The strategic principle of “the right patient to the right hospital in the shortest time” is generally not followed, as there is no communication between ambulance staff and various hospitals. National or regional guidelines for triage, patient delivery decisions, and pre-hospital treatment plans do not exist.**

*<http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.566.4326&rep=rep1&type=pdf>*

Ms. P. Potluri (Editor Asian Hospital & Healthcare Management) also very correctly pointed out in her article Emergency Services in India - Counting on betterment that the foundation of this Emergency Medical service is based on the well-known and accepted fact that a patient who receives basic care from trained medical professionals and is transported to the nearest healthcare facility within the first 15-20 minutes of an emergency (the Golden Hour, ten platinum minutes), has the greatest chance of survival. She highlighted that though developments have been made in the healthcare sector in India over the past decade, **India is yet to create a single, comprehensive EMS that can be accessed throughout the country.**

*<https://www.asianhbm.com/healthcare-management/emergency-services-india>*

‘Emergency Medical Services in India: The Present and Future’ published by Mohit Sharma and Ethan S. Brandler, also focussed on the fact that **The Emergency Medical services in India is currently very fragmented and not accessible throughout the country.** They also highlighted that most people do not know the number to call in case of an emergency, **private ambulance models exist with**

wide variability in their dispatch and transport capabilities and also that variability exists in EMS education standards with different establishment of courses.

**Due to the above factors, Global Health Alliance with the help of the FCO Prosperity Fund organised several workshops and meetings in India from July to December 2016. The Paramedic up-skilling feasibility project was done with a view to assess and review the pre-hospital care arrangements/Emergency medical services in India especially with regards to the Emergency Medical Technicians (EMTs) and paramedics.**

The following workshops were done by Global Health Alliance as part of the feasibility study -

- BLS Course/Workshop with Govt. of Maharashtra, November/ December 2016.
- Burns Management Course and Workshop with Government of Maharashtra November 2016
- Emergency Medicine Workshop at Paras Hospital August 2016
- International Aviation Medicine Workshop in Delhi and Hyderabad November 2016
- MERIT Emergency Workshop, Columbia Asia, Bangalore October 2016
- Emergency Medicine at Skills Centre, BHU, Varanasi October 2016
- MERIT Emergency Workshop, Ganga Ram Hospital, Oct 2016
- MERIT Emergency Workshop- Cygnus Hospital, Delhi July 2016

Several medical professionals/ experts participated in this study and as a part of their input have submitted a written report with their findings and recommendations. All these individual reports have been included in the following chapters of this report.

## **2. Report from experts on GHA's (Global Health Alliance) project on Paramedical Pre-Hospital Emergency Ambulance System in India**

**Prof. Dr. V Gautam Dip IMC, FCEM, FRCS, FRCP (London)**

**Prof of Emergency Medicine, St Peter's Hospital, London**

This report about the Paramedical Pre-Hospital Emergency Ambulance Provision in India is presented in 6 parts:

1. Introduction to the topic and its importance
2. Example from one of the workshops conducted by GHA
3. Introduction to the opportunities in India for UK expertise
4. Reflections on the way forward
5. Summary of recommendations
6. Abbreviated CV of the Author

### **1. Introduction to the topic and its importance**

The landscape in India with reference to Paramedical Care (pre-hospital emergency medical services EMS) is currently being re-defined within a variety of contexts including the legislature, public demand, media perception and developments on the ground. The services provided by GHA are making a substantial impact on behalf of the NHS, UK.

This brief report reviews the important variables based on personal observation and discussions with local recipients. Further details are available from the Author. It is recommended that projects like those being implemented by GHA should be supported further to achieve full potential in the mutual interests of India and the UK.

The minimum number of emergency ambulances recommended by WHO experts is 1 for each 100,000 population. Middle-income countries have approximately 4 times that number. Due to new Central and State government funding, awareness and public demand, the number of vehicles in India claiming to be ambulances meet or exceed the minimum standards set by the expert international bodies. However, in the absence of benchmarks, standardisation, oversight, governance and regulatory framework the expansion in the India is somewhat random, leaving the door open for all kinds of players and participants.

Local and international efforts are being made informally and officially to establish a training program for those who provide pre-hospital services.

Historically NHS UK was the first healthcare system in the world to develop a highly efficient and effective, universally applicable paramedical service, which has all the strengths of an affordable, comprehensive and adaptable pre-hospital EMS (Emergency Medical Service).

The current developments in India represent a generational opportunity for the UK to connect with and provide for the intellectual, academic and equipment needs within one of the largest emerging global economies, to achieve the potential of bilateral benefits and to represent itself favorably alongside competitors.

There are numerous equipment, expertise and education providers in the UK who have portfolios that fit exactly into the massive needs of India and deserve every possible support in the UK of the kind that seems to be available from the governments in other competing countries of Europe including Germany, Sweden and France for their own industries.

GHA with its unique approach, networks and access to local decision makers, service providers, educators and trainers in India, seems to opening the doors for the UK. organisations.

## **2. Example from one of the workshops conducted by GHA**

I had the opportunity to observe the work being done by GHA on several occasions. For purposes of the report, as an example, I shall focus on one of the recent workshops conducted by GHA at the prestigious BHU in Varanasi (the Indian Prime Minister's constituency) that I attended.

It was organised collaboratively between the Directors of GHA (Dr Rajay Narain) and BHU (Prof Dr. V.K. Shukla) on-campus at the Institute of Medical Sciences at this Institute of National Importance in Varanasi, India.

As proof of its importance to the host institution, despite it being a holiday, nearly 40 people, including the BHU Director Prof Dr. Shukla and representatives from the faculties of the Medicine, Surgery, Cardiology, Anesthesia, Pharmacology, Nursing Departments and several Paramedical Pre-hospital service providers attended the training.



The workshop was conducted by GHA paramedics, who delivered a program of practical scenario and case-based training in basic life support and common life threatening emergencies.

Every participant was given personal attention and the opportunity to practice the core skills taught on the course. This kind of learning experience appeared quite rare and unique to the learners, who enjoyed and valued it, requesting the GHA trainers to return for a more elaborate program in the near future.

I was left in no doubt that the future development in competence; confidence and capacity building within the under-supplied area of paramedical pre-hospital care-skills in India will surely reflect in one way or another the approach taken by the GHA.

As pioneers and trailblazers in their field, GHA seem to have extraordinary influence on the expectations and thinking of the decision makers. It can be reasonably expected that those they train will in the future look to GHA for further advice as things evolve and move forward in India.

### **3. The Gap in India: An Introduction to the opportunities in India for UK expertise**

As noted in the introduction above, despite its substantial need, and recent developments, currently in India, there is no legal registry of pre-hospital services or service-providers. Minimum standards of recruitment, training and service have not yet been nationally agreed or implemented. There is no national legislative framework in this domain, though work is continuing apace (with some of which, the author is personally involved).

Substantial variances exist across the different Indian states, within the federal system there. Numerous agencies and government departments are involved. A mixture of private and government sectors provide the services. Patient expectation is rising and a strong health care insurance industry is emerging rapidly.

This is very likely to accelerate the momentum towards generating a major demand for the expertise, education and equipment in pre-hospital emergency medical services.

Efforts are underway to fill this gap at many levels in India. It is in UK's interest to be present and visible. In many Indian states including the Prime Minister's own constituency, GHA is the only obvious representation of UK's strong portfolio in this rapidly emerging and growing field.

#### **4. Reflections on the way forward and the risk**

With over 30000 ambulances in India and expected labour force of over 120,000 to provide the service, this sector offers new and unprecedented scope for UK expertise in a range of domains from administration and technology to equipment and education. None of this is possible without gaining a foothold first. Most importantly, it can only begin to happen by showcasing the UK expertise.

Currently most Indian service providers, policy makers and educationists have no experience of the highly efficient and effective services in the UK and the latter's ability to up-skill the Indian providers in addition to being world class source of equipment.

The universally valid methodologies and techniques developed in the UK are attractive to India due to language and cultural advantages. GHA is making steady progress by conducting landmark workshops with the help of UK paramedics. Their approach is generating awareness and goodwill, the demand for which is likely to escalate at the local level. Within two years India is very likely to have a national regulatory framework with the need for further international services, hardware and training in this new, rapidly expanding domain.

The risk with any of the above projections and model, of course is that the timeline may not be met and in this highly attractive but competitive space of pre-hospital EMS, other countries may gain an unexpected advantage, unless a strategic, consistent medium approach is taken and supported from the UK.

#### **5. Recommendations:**

A. The most important consideration arising from the above is to recognise the compelling scope of the pre-hospital provisions within India's health care sector valued in aggregate to more than \$100 Billion.

B. For several good reasons UK should engage closely in this rapidly developing domain of the which the NHS is already a global leader.

C. Successful and effective ambassador organisations like Global Health Alliance should be recognized and supported for the excellent pioneering work they do in India.

D. In due course, it will be highly desirable to connect closely with the legislative and policy framework emerging in India with reference to benchmarking the pre-hospital services and participate in its development and implementation.

E. In due course, the opportunities and the potentials arising from the establishment of the paramedical council in India or its equivalent, will be of substantial mutual benefit.

F. The uncertainties, risks and the competitive nature of this domain should be recognised and GHA and similar organisations should be supported to overcome these.



### **3. India Pre-hospital ambulance system**

**Lisa Ellis, Senior Training Officer, Southwest Ambulance Service, UK**

After our visit in early September 2016, we were fortunate enough to visit several hospitals in Delhi, Varanasi, Bengaluru and an ambulance despatch centre in Delhi.

#### **Training of ambulance staff**

Training is currently focused on recruitment of nurses and providing additional training. While this is an acceptable way of ensuring paramedics enter into the role with a higher education, in the future completion of a recognised higher education in paramedic care will provide a more focused role.

The extended training for paramedics should not lose sight of the fundamentals of prehospital care. For example, on a number of occasions we saw senior healthcare providers unable to lead and provide effective basic life support with a defibrillator.

In some areas of India, we found a reasonable, but short training programme for paramedics and ambulance staff. This needs to be broadened to consider a wider range of available drugs staff can give under group directives, effective major trauma care, and effective cardiac care of STEMI patients. This can only be achieved under guidance of a UK team who should develop a group of paramedic tutors, with the intention of developing their ability to become increasingly autonomous and deliver education to future student paramedics.

In some areas of India, we found that ambulance training staff had never attended an emergency call on an ambulance. Some were also unable to identify basic pieces of equipment in an ambulance. An experienced and well-qualified training team from the UK should be considered to lead a train the trainer programme for ambulance staff. In addition to this regular, supervised clinical shifts are required to ensure paramedics are keeping consistent levels of care across India.

#### **The staff**

Despite meeting only a handful of ambulance staff/paramedics in India we were impressed by their professionalism and enthusiasm for the role. On one scenario a 'paramedic' successfully managed a team of senior doctors with a good level of

patient care. We were impressed by his experience as a paramedic and ability to lead.

In many areas of India ambulance staff are not given a uniform. To ensure an appearance of consistency and professionalism a uniform should be given. This also ensures staff are not wearing their own clothes and are easily identifiable at an incident. The use of high visibility clothing should also be considered for staff safety.

### **The ambulances**

A lot of the ambulances we visited are very basic. However, despite this a number of the services such as CATS in Delhi have given some good thought in to which basic kit to utilise.

However, to improve the delivery of care a consideration to improved monitoring equipment, automated external defibrillators, and immobilisation equipment should be considered.

### **Control centre**

During our stay in Delhi we were given a tour of the CATS service. We were very impressed by the call centre, use of mobile data terminals, and overall process of how ambulances are utilised. Although there are some areas for improvement I believe the CATS team are demonstrating a potential 'flagship' centre that could be implemented across India.

The CATS team advised us on the difficulties establishing a universal number to call for the ambulance service. Although this is clearly being addressed a standardised number will ensure that members of the public are clear on how to seek emergency medical help.

### **Public education**

A public education programme is needed to ensure the general public are aware of the ambulance service capabilities and benefits. We were told by a number of people in India that often people do not utilise the ambulance service. It has been speculated this is often due to cost as many people can often not afford the money that would be charged. While I recognise that it is a casual remark to state that all healthcare costs should not be charged to an individual or family, this is a major factor in ambulances not being called.

It is also recognised that public education would be considerably harder in areas that are poorer and are lacking in even basic needs.

### **Infection control**

In some areas of India the use of basic universal precautions is not routinely used. This must be implemented as soon as possible to prevent cross contamination.

In other areas ambulances are not routinely cleaned and even the stretcher plastic sheeting still remains on it to “keep it clean”. A much more focused education programme must become mandatory to all ambulance staff. This must also be regularly updated and retrained to staff on an annual basis.

### **Summary**

In summary there are several areas that would benefit from a standardised approach to up-skilling and training current and future pre-hospital providers. We would welcome the opportunity to be involved in this process, but recommend a more formal evaluation of services and clinical provision should be undertaken and that this should begin at a senior level to ensure a formal arrangement is made.



## **4. Report from India visit - Pune, Maharashtra**

### **S Edwards, Senior Lecturer in Paramedic Practice, Sheffield Hallam University**

#### **Background**

I am a Senior Lecturer in Paramedic Practice currently employed by Sheffield Hallam University (SHU). Prior to commencing my post with the University I was employed by Yorkshire Ambulance Service as a Paramedic Clinical Supervisor. I worked within the ambulance service for 23 years. I am registered with the Health Care Professions Council. I have never travelled to India previously and had no prior knowledge of healthcare in this country. I travelled with my colleague who is the Paramedic Practice Course Leader at SHU and a Registered General Nurse.

The visit was conducted between 13<sup>th</sup>-19<sup>th</sup> November 2016.

#### **Basic life support (BLS) teaching-**

The first two days of our visit consisted of the delivery of basic life support teaching to 70 students at the Health and family welfare training centre, Pune division, Maharashtra. The students were a mix of Medical officers, General nursing midwife, Auxiliary nurse midwife Multi-purpose workers. Although some of the learners were working in the Emergency Department (ED) and Intensive care unit (ITU) skill and knowledge levels surrounding BLS appeared low. Senior staff within the training centre believed that the learners need to be taught advanced life support. This level of teaching would not have been appropriate as a basic understanding of the concept of cardio pulmonary resuscitation (CPR) was not demonstrated. Teaching included blood flow through the heart, basic electro conductivity, CPR theory and practical. Cardiac rhythm recognition and defibrillation were demonstrated but not taught in detail. The training was well received by all learners. Learning was assessed by observation of the practical application of the taught skills. All learners received a certificate of attendance of the course.

Staff working outside the hospital in the Primary health care centres and Sub centres did not have access to defibrillators. The only defibrillator available to these staff would be the arrival of an ambulance carrying a defibrillator.

#### **Recommendations-**

All clinical staff to receive BLS training

Automated External Defibrillators (AED) to be available in Primary health care centres and Sub Centres

Medical officers to receive Advanced Life Support training

Investment in training equipment to support BLS/ALS training

Train the trainer programme to support the implementation of BLS/ALS training nationally

### **Emergency Services and standard of Ambulance Drivers**

During our visit we were taken to the 108 ambulance headquarters in the state of Maharashtra. We were given an overview of the emergency response provided by the state to anyone calling upon the 108 service.

The ambulances appeared to be evenly distributed throughout the state providing either a BLS or Advanced life support (ALS) response. The main differentiation between these vehicles was the presence of a defibrillator on the ALS ambulances. Vehicles were of a standard size which are not always able to access densely populated locations. We were informed that large numbers of the population were unaware of the number to call for a state emergency ambulance. Recent research confirmed that only 12% of patients are arriving at hospital via ambulance compared to 58% transported by family or friends. Increase in call volumes to 108 over the last three years is due to promotion of the service in schools by the 108 service or by word of mouth following use of the service.

Vehicles were staffed by two attendants and one Ayush doctor. The Ayush doctors study prehospital care for 18 weeks at their training centre. This study is in addition to the completion of their general medical education. Ambulance training is provided at the 108 centre. We were given an ambulance training manual which has been developed by the faculty. The manual appeared to be comprised of several books hashed together and was outdated compared to many practices in the United Kingdom (UK). Equipment on the vehicles appeared to be basic and varied between vehicles. A wide variety of drugs were carried on the ambulance, many of which are no longer used within the UK in pre-hospital care.

Several other emergency response numbers were in operation across the state offering varying pre-hospital responses. Numbers in use across the state provided access to a multitude of different ambulance services. It was unclear as to who coordinated these other services, clinical levels of staff or training provided. There

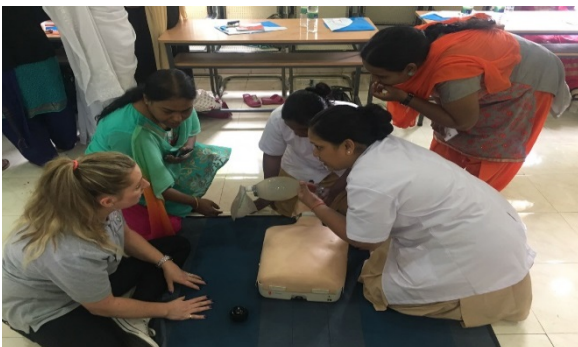


appears to be no standards of education, standard operating procedures or register to allow for regulation of the activities pre-hospital personnel in India.

### Recommendations-

1. One national telephone/text number for emergency services
2. Public education of which number to call for an emergency ambulance
3. Up-skilling of nursing staff in-line with UK paramedic standards, to be able to staff ambulances
4. Creation of a paramedic role similar to that of the UK
5. Up-skilling of ambulance drivers to support the new paramedics
6. A common syllabus to be developed and accredited for pre-hospital clinicians
7. A manual of the syllabus to be written and published
8. Regulation of services centrally at government level
9. A national paramedic register to be held and maintained
10. Development of a Paramedic council to steer direction of services and develop guidelines
11. Smaller vehicles (car or motorbike) to be introduced as a first response to allow access to difficult locations
12. Standardisation of kit and drugs to be carried on all emergency vehicles
13. Community first aid training programmes

All recommendations are all based on my own findings from information gained on my visit and are not evidence based.



## **5. Current state of Emergency Service and standard of Ambulance Drivers in India**

**Daniel Creton, Senior Paramedic Lecturer, St George's University of London**

The major observations made regarding the standard of Ambulance drivers in India is there is no apparent governance, set syllabus or Health Professional Council HPC, the main aim of this body is to regulate the health professional, keep a register of professionals who meet the standards set by them in order to protect the public.

Professionals are required to meet the standard of training, commit to continuous professional development for training, professional skills, behaviour and health.

This in turn ensures the professional employed are continuously meeting the standards expected of them by regulation and ensures no one else can use this "protected title" without a being registered and monitored.

India at present, does not appear to have approving and upholding high standards of education and training, and continued good practice.

The paramedics I had the pleasure of meeting were not confident in their skills but very open and keen to learn and consolidate their learning.

In terms of "The golden hour" and the "Platinum ten minutes" that typify the importance of the Emergency Medical services EMT it appears to be accepted that this does not exist, in fact, not one of the EMTs I spoke with recognised this goal.

Emergencies typically occur in cases like road accidents, cardiac problems, convulsions etc. Trauma appears to continue to be one of the major causes of death in India, the existing fragmented system falls terribly short of meeting the demand and trained expertise this requires.

To avoid preventable deaths and disabilities, India must be made aware of the available training and preparedness that is mandatory in developed countries and the utmost importance of Emergency Medicine as the pinnacle in the chain of survival.

I did not witness advanced life support in the pre-hospital arena and did not feel paramedics played an integral role in the efficient functioning of the healthcare system compared to UK. Some of the EMTs were unable to record basic vital signs and as far as I understand cannot verify death, I was informed the medical code is clear, verification of death can only be declared by a Doctor, in some states the

Paramedic takes the dead body to hospital for a Doctor to verify. This begs the question of the apparent indecision on the part of the clinician on scene at the time of the Emergency.

One has to wonder how many lives could have been saved if Paramedics had been trained more efficiently, been given clear instructions and feel confident in their skills. Practices appear to vary from state to state.

### **What can be done to improve the service?**

The importance of reliable, highly trained Paramedics EMTs in the pre-hospital arena cannot be over emphasised, particularly in India where the government has the responsibility of caring for most the population. It could be argued that the nation of a billion people has been deprived of professional, efficient and confident pre-hospital care for too long.

From what it has been identified the Pre-Hospital Emergency Service needs to be improved greatly, there appears to be a massive scope to develop existing staff.

By implementing a robust syllabus that is easy to follow, transparent and easily transferrable with a correct code of conduct, in uniform with other developed countries such as UK, Australia, USA to ensure it works as expected.

With regulatory bodies such as the HPC and The Royal College of Paramedics making it legally compulsory to adhere to best practice making the clinician accountable for keeping up to date with latest training and best practice within their own scope of practice.

By engaging in a framework that is recognised worldwide and robust.

By teaching and preparing Paramedics in the essential skills to help in life threatening situations, to educate and continue with the development of this education.

In short, education is the key.

The paramedic role is exhausting, physically, mentally and emotionally, with clear training goals, preceptorship and continuous professional development and a regulatory body working in partnership with good people, willing to learn, to ensure safe and best practice, India could have a Pre-Hospital Service it deserves.

### **Roadmap for future by having a common syllabus, setting up Paramedic Council for Guidelines.**

By adopting a centralised body which provides a syllabus, guidelines and ongoing support for the improved service of Paramedics.

It is apparent India has yet to establish an effective system in trauma care.

This could be achieved in phases.

**Phase A [A for airway]**

This should be considered as high priority.

Making new policies, enforcing new standard operational procedures within the emergencies services, embedding a professional council to regulate medical practice and ensure training needs are identified and met.

A national strategy and an accredited regulatory framework.

**Phase B [Breathing]**

Audit and achieve “Golden hour” (Platinum)

Systematic triage protocol (tools) within formal recognised, regulated training.

**Phase C [Circulation]**

Ongoing continuous support, audit and improvement, compliance.

Service quality enhancing the image of trauma care and emergency medicine.

**To conclude**

**To make things better and safer in times of need**

It has been highlighted that in India there is significant work to be done, however, by increasing resources and improving training for existing staff, paying particular attention to the importance of standard practice, clinicians working to within robust guidelines to achieve best practice within their scope of regulated practice.

By implementing a national model in Health and Social Care to adhere to cutting edge clinical knowledge.

To influence a programme and follow great leaders in Pre Hospital Care Management, encouraging and delivering a greater understanding to India's Paramedics and EMTs in core skills and mandatory clinical knowledge in standard Paramedic Practice.

This will in turn achieve the best outcome for the patient in their time of great need.



## **6. Report from India visit - Pune, Maharashtra, 13th-19th November 2016**

**Andrew W Kirke S.B.St.J. MSc, BSc(Hons), FFEN, FHEA, RN. –**

**Senior Lecturer & Course Leader in Paramedic Science.**

I am a registered nurse with a wide-ranging expertise relating to Emergency care both in and outside hospital. Following a request from Dr Narain from Global Health Alliance Sharyn Edwards and I visited Pune in India to deliver some Basic Life Support (BLS) Training and to review the prehospital care arrangements there. Our visit lasted 1 week and I would like to acknowledge all our kind hosts for their hospitality and kindness in looking after us and providing us with unfettered access to their facilities.

### **BLS Training**

The 14<sup>th</sup> & 15<sup>th</sup> November we delivered BLS training to some 70 students at the Health and family welfare training centre, Pune division, Maharashtra. The students were a mix of:

- Medical officers,
- General nursing midwife (GNM),
- Auxiliary nurse midwife (ANM)
- Multi-purpose workers (MPW)



The students were drawn from a wide range of facilities and specialities from the state. In general, the pre-existing knowledge of the students was very low, although their thirst for knowledge was impressive. Teaching included blood circulation through the heart, basic electro conductivity, CPR theory and practical. Cardiac rhythm recognition and defibrillation were demonstrated but not taught in detail. Despite some language difficulties, with the aid of our translators the information was communicated effectively. To confirm the acquisition of the practical Cardio pulmonary resuscitation (CPR) skills the students demonstrated what they had learnt, in return the students received a certificate of attendance. Whilst early access to CPR is one of the key aspects of the chain of survival, without a shadow of

doubt the most important element of the chain is early access to defibrillation. Access to defibrillation in the district was extremely limited and needs to be urgently addressed.

Following the delivery and observation we would make the following recommendations:

- All clinical staff to receive BLS training, with regular revalidation (3 yearly initially, moving to annually)
- Automated External Defibrillators (AED) to be available in Primary health care centres and Sub Centres
- Medical officers to receive Advanced Life Support training – (Advanced Medical & Advanced Trauma Life support courses to follow)
- Investment in training equipment to support BLS/ALS training
- Train the trainer programme to support the implementation of BLS/ALS training nationally

### **Pre-Hospital Emergency Care**

During my previous visits to India there had been little or no coordination of Pre-hospital emergency care. Over the last 3 years there has been much work in developing a national Government Ambulance service. We visited the state headquarters of BVG 108 Ambulance Service <http://bvgindia.com/emergency-medical-service/> Citizens across Maharashtra can access a free ambulance in case of any medical emergency by dialling toll free number '108'. These calls are handled by a state of the art "Emergency Response Centre" (ERC) is developed at Aundh Chest Hospital Pune, who can despatch one of the 108 Ambulances.



BVG claim to have some 1,000 vehicles in active service distributed across the state of Maharashtra, with approximately 300 of these being Advanced Life Support (ALS) vehicles. The ALS vehicles are reasonably well equipped by UK standards including Defibrillator, Monitoring equipment, Syringe drivers, Extraction equipment and wide range of Emergency drugs. The equipment level of the non-ALS vehicles is of

concern however, the lack of even a basic Automated External Defibrillator (AED) is a distinct concern. Any patient being transported in an ambulance has the potential to deteriorate and go into cardiac arrest. I would consider access to an AED an absolute minimum standard in every ambulance for such an occasion.

Vehicles were staffed by two attendants and one Ayush doctor. The Ayush doctors study prehospital care for 18 weeks at their training centre. This study is in addition to the completion of their general medical education. Ambulance training is provided at the 108 centre. I would question the appropriateness of utilising qualified doctors in this role. I would see the creation of a Pre-Hospital Paramedic in line with the UK role of Paramedic under a similar registration/body as the next logical step. The education and conversion of qualified GNM's could provide a quick start to such a program. The Driver/attendant receive comparatively little education in comparison, either clinically or in relation to driving an ambulance. There also seems to be a lack of education around Health and Safety issues for either crew members. There is no education relating to Infection control, Moving & handling, Sharps management, Conflict management etc. We were given an ambulance training manual which has been developed by the faculty. The manual appeared to be comprised of several books and information from other sources hashed together and much of it was not in line with current best practice, I would strongly recommend a second addition be drafted immediately with academic support.

The number and complexity of drugs carried on these ambulances needs to be reviewed, I cannot envisage when or how some of these would be used outside of ITU. It would be interesting to audit the use of all medication currently carried. The presentation of some of the medications was less than ideal, most if not all were in Ampoules form

Current response times revolve around getting an ambulance to the patient in sub 30 min. As the service develops & grows this should be aimed towards getting some form of clinical support to the patient within the sub 10 min mark. This could be achieved by the development of community responders and Co-responders from other emergency services.

Several other emergency response numbers were in operation across the state offering varying prehospital responses. Numbers in use across the state provided access to a multitude of different ambulance services. It was unclear as to who

coordinated these other services, clinical levels of staff or training provided. There appears to be no standards of education, standard operating procedures or register to allow for regulation of the activities pre-hospital personnel in India, however 108 appears to be the predominant provider in the state of Maharashtra.

During our visit, we witnessed the re-use of single patient use equipment and other challenges to infection control including unsafe management of sharps.

Finally, although this report contains my observation and recommendations, which may seem critical, I must congratulate the team at 108 for the improvements made over the past 3 years. A very big thanks must also go to Dr Narain and the Global Health Alliance for all their work in this field – Thank you.

#### Recommendations-

- Regulation of services centrally at government level
- Creation of a paramedic role using a common syllabus to be developed and accredited for prehospital clinicians
- A national paramedic register to be held and maintained
- Protection of the Title 'Paramedic' or similar.
- Development of a Paramedic council/college to steer direction of services and develop guidelines
- Upskilling of ambulance drivers to 'Emergency Care Assistants' equivalent to better clinically support the new paramedics
- Driver training for Emergency driving
- The manual of the syllabus to be rewritten and published & to include health & safety subjects
- Review and streamlining of medication carried on Ambulances
- Standardisation of kit and drugs to be carried on all emergency vehicles
- Smaller vehicles (car or motorbike) to be introduced as a first response to allow access to difficult locations/road conditions
- Community first aid training and Co-responder training programmes, including Police, Fire and Military personnel

All views and opinions within this report are my own held beliefs, gathered during this visit.



*AW Kirke*

Andrew Kirke

16 March 2017



Inside a non-ALS Ambulances

## 7. Conclusion

Dr. Rajay Narain

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In the report above we have endeavoured to share Global Health Alliance's experiences and learning of the last few months with regards to the pre-hospital care arrangements in India especially in the context of Emergency Medical Technicians and Paramedics. We have also tried to highlight from these learning, what measures can be taken to create an effective and unified Emergency Medical Services in India.

As reported before in the introduction, it is important to reiterate in this section that there is a massive and acute shortage of health care personnel and allied health workers in India in proportion to its ever-growing population. WHO South-East Asia Journal of Public Health 2013 advised that according to the 2006 World Health Report, "India at the time had 0.60 doctors, 0.80 nurses, 0.47 midwives, 0.06 dentists and 0.56 pharmacists, respectively, per 1000 population. **At the national level, the aggregate density of doctors, nurses and midwives was estimated to be 2.08 per 1000 population, which was lower than WHO's critical shortage threshold of 2.28.**

In comparison, as per British Medical Association' 2014 UK Medical Workforce Briefing published in May 2015, when comparing the total number of the medical workforce within each UK country with projected population, the overall number of doctors per 1,000 population in the UK is 2.8. Though this is also below the OECD (2014) average of 3.2 doctors per 1,000 population. Scotland records at 3.4 doctors per 1,000 population.

Also, before I summarise the measures in this section of the report and outline a viable recommendation to support the up-skilling of paramedics in India, I feel that it is important to discuss, albeit briefly, the structure and role of UK's Emergency Medical Service (EMS).

The Emergency Medical Services in the United Kingdom provide emergency care to people with acute illness or injury and the Ambulance Service (AS) constitutes the main element of this service. AS helps people with serious or life-threatening

conditions and provides a range of other urgent and planned healthcare and transport services.

In the UK, an ambulance crew can include a range of medical staff, such as emergency care assistants and paramedics. These staff are highly trained in all aspects of emergency care, from trauma injuries to cardiac arrests. An ambulance is equipped with a variety of emergency care equipment, such as heart defibrillators, oxygen, intravenous drips, spinal and traction splints, and a range of drugs. Patients will always be taken to hospital when there is a medical need for this. However, paramedics now carry out more diagnostic tests and do basic procedures at the scene.

The EMS comprises of trained medical professionals called Emergency Medical Technicians (EMTs). There are different levels of EMT, such as EMT-Basic, EMT-Intermediate and EMT Paramedic.

An EMT basic is the most elementary level of EMT training, but it allows the practitioner to do important lifesaving functions, such as bandaging wounds, treating burns, doing CPR and stabilizing spine and neck fractures and broken bones. Becoming an EMT Basic requires specialized training in Basic Life Support (BLS).

EMT Paramedic provides specialist care and treatment to patients who are either acutely ill or injured. A paramedic's scope of treatment includes performing lifesaving procedures such as tracheal intubation and I.V. support, as well as the Basic Life Support functions performed by a basic EMT. Paramedics also administer a wide range of drugs to deal with conditions such as diabetes, asthma, allergic reactions, overdoses, and heart failure.

In the UK, to study and qualify as a paramedic, one can either take a University qualification in paramedic science (diploma, foundation degree or degree) and apply to an ambulance service as a qualified paramedic or can become a student paramedic with an ambulance service and study while they work.

In the UK, Paramedic staff is regulated by the Health and Care Professions Council (HCPC). HCPC regularly reviews the Standards of proficiency for paramedics to look at how they are working and to ensure whether they continue to reflect current practice. In addition to this, there is also The College of Paramedics which is a

professional body for paramedics and the ambulance profession in the UK. The College represents its members in all matters affecting their clinical practice and supports them to achieve the highest standards of patient care. The College also develops professional standards guidance and responds to consultation documents and requests for advice from government, and other professional and registrant bodies. Emergency Medical Units in the UK are privately, publicly and voluntarily operated. The volunteer units are usually found in rural areas where the local government can't afford to operate these types of services. In these instances, the emergency workers usually have the most basic level of medical training.

**Briefly summarised are some of the key concerns that have been highlighted by the different experts who have contributed to this report:**

1. Lack of a responsive and time-sensitive Emergency Medical System (EMS)
2. Lack of a comprehensive and unified national body to govern and review the workings of the Emergency Medical Service staff such as EMTs and paramedics.
3. The current EM services being fragmented, disjointed and inaccessible all through the country
4. Lack of a standardised national number to call on to access EMS or ambulance services
5. Ambulance vehicles are of a standard size hence are not always able to access the densely-populated locations and especially in view of the traffic problems in most cities in India.
6. Training manuals that have been developed by different state government or private hospitals all over the country are mostly outdated compared to many practices in the developed nations.
7. Most basic of equipment are not available on the ambulances/vehicles such as the lack of a basic Automated External Defibrillator (AED), etc.
8. A wide variety of drugs carried on the ambulance are also outdated and in a lot of instances and no longer in use in the developed countries in the pre-hospital care.

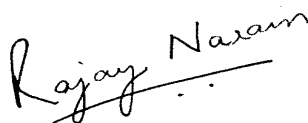
The importance of a reliable EMS cannot be overemphasised in India due to the government having the primary responsibility of caring for a majority of the population.

It has been established from the above findings that it is imperative first and foremost to :

- **Create and establish a centralised national body in India such as a Paramedic Council which standardises Emergency Medical Service education and curriculum, sets guidelines for training and the running of the EMS and also clearly sets out the standards of proficiency, conduct, performance and ethics for the safe and effective practice of this profession.**

But in the context of lack of such a centralised governing body like paramedic council, there are practical limitations to what measures can be taken with regards to creating and training of paramedic staff in India and in defining their roles.

- **Global Health Alliance is hence recommending that as a road map for the future a skill centre be set up in India as a pilot project for nurses who can be trained as paramedics in-line with UK paramedic nursing programme. This 12-month programme/course which has been running successfully in the UK by several universities, trains qualified nurses to become paramedics. It is a very viable solution in delivering a quick and effective pre-hospital emergency service in India. Additionally, young individuals can be trained over 2 month to become EMTs. Both these programs can be designed and delivered in India on the UK model which can be prepared by a range of experts from various paramedic departments from leading universities in the UK.**



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