

Utilization of Emergency Management and Research Institute (108 EMRI): An Emergency Response Service in Khammam District, Andhra Pradesh, India

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ABSTRACT Emergency Management and Research Institute (EMRI) operates 1-0-8, 24X7 emergency service for medical, police and fire emergencies in India. Born in the context of the ineffective co-ordination among multiple emergency response systems, it was introduced on 15th of August 2005, with a fleet of 652 ambulances within the state of Andhra Pradesh (AP) as a Public Private Partnership. Objectives of this work were to study the utilization pattern of 108-EMRI services in Khammam district of AP, the demographic profile of the beneficiaries and the types of emergency services provided by 108-EMRI, using data provided by the District Coordinator of 108-EMRI. Secondary data was taken from the District Coordinator of 108-EMRI for a period of one year (June 2008 to May 2009). A total of 60,898 beneficiaries had availed the 108-EMRI services in the four divisions of Khammam district. Among the beneficiaries, majority were pregnancy related (17.9%), followed by RTA (Road Traffic Accidents) (13.8%), suicides (6.7%) and cardiac emergencies (3.9%). EMRI is undoubtedly operationally effective system in reaching out to those who are in need. To its credit goes the achievement of bringing Emergency medical response on to the agenda of the nation.

INTRODUCTION

Historically, Emergency Response Services (ERS) are in practice since 18th century (during the Napoleonic times) when a pre-hospital system was designed to triage and transport the injured from the field to aid stations. Emergency Response Services are generally associated with medical services, police emergency and fire service. This forms the core group of services to be provided. However, many other functions can be combined to form a broader 'package' of ERS including emergencies like mountain rescue, cave rescue and mine rescue etc. Other emergencies like disaster relief and famine relief form part of the civil emergency services. An emergency call service was first launched in 1937 in the United Kingdom known as the 999 emergency services.

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The key lesson, as evident from the experiences of such Emergency Response Services (ERS) worldwide and historically, is that these are not short run investments. Even after 70 years of operation, 999 required an investment of £10 million on infrastructure and training. This provides six kinds of services: police, ambulance, fire, coastguard, and cave and mountain rescue. The European counterpart to this service is the 112 number that also runs in the UK today along with its 999 phone line. United States of America introduced a similar service with the number 911 in 1968. It has been designated as the Universal Emergency Number for citizens throughout the US to request for emergency assistance. Today, approximately 96% of continental USA is covered by 911. It is intended as a nationwide telephone number and gives the public fast and easy access to a Public Safety Answering Point (MOHFW, NHSRC). India is gradually moving to use of one emergency telephone number across the country, 108, on the lines of America's 911 and Britain's 999 (www.Indiabroadband.net).

In the Indian context, a much discussed and successful Public Private Partnership (PPP)

model for Emergency Response System is the 108 Emergency Service being managed and operationalized by EMRI (Emergency Management and Research Institute). Born in the context of the ineffective co-ordination among multiple emergency response systems, it was introduced on 15th of August 2005 in Andhra Pradesh (AP) as a Public Private Partnership (PPP) (www.andhranews.net). This is the first ERS in the country, launched in collaboration with the Government. The Government has recognized EMRI as the nodal agency for providing ERS in AP. The Government also provides support by ensuring that the police and fire departments attend emergencies as necessary. Apart from this, it ensures that in an emergency case, especially if it is a medico-legal case, Government hospitals accept the patients (www.expresshealthcaremgmt.com). EMRI began operations in Andhra Pradesh with a fleet of 30 ambulances across 50 towns of the state; currently the service is operating with a fleet of 652 ambulances covering 23 districts. The call centre on an average receives around 54,000 calls in a day. EMRI has tie ups with 3331 private hospitals in Andhra Pradesh, apart from the government hospitals that can handle emergencies. In the private hospitals the patients are not charged for the first 24hrs. After its successful implementation in Andhra Pradesh, EMRI services were initiated in other states of India. EMRI is set to become the largest Emergency Response and Research Institution in the World.

1-0-8: The Magic Number

1-0-8 is a technologically acceptable number enabling the processing of calls to occur faster. 1-0-8 functions effectively as a user friendly number because during a crisis situation the eye automatically searches the first digit on the number pad which is 1 and then moves downward to find 0. This is the exact order in which 1-0-8 is being laced. 1-0-8 is a primordial number resonating across countries, cultures, religions and is also a prime number to astrologers, astronomers, linguists and mathematicians. The ancient Indians were excellent mathematicians and 108 may be the product of a precise mathematical operation (for example, $1 \text{ power } * 2 \text{ power } 2 * 3 \text{ power } 3 = 108$) which was thought to have special numerological significance. He-

art Chakra: The chakras are the intersection of energy lines and there are said to be a total of 108 energy lines converging to form the heart chakra. One of them, sushuma leads to the crown chakra, and is said to be the path of self-realization (www.emri.in).

The present study aims to find out the utilization pattern and demographic profile of beneficiaries of 108-EMRI services. The main objectives are to study the utilization pattern of EMRI 108 in Khammam district, to study the demographic profile of the beneficiaries in Khammam district and types of emergency services provided by EMRI 108.

MATERIAL AND METHODS

It is a retrospective study based on secondary data obtained from the District Coordinator, 108-EMRI of Khammam District. Data on a total of 60,898 beneficiaries who availed the 108-EMRI services in the four divisions of Khammam district namely Khammam, Kothagudem, Palvoncha, and Bhadrachalam from June 2008 to May 2009 and was analyzed keeping in view of the objectives of the study.

RESULTS

Of all the beneficiaries, majority were from Khammam division (53%), while the least were from Bhadrachalam division (12.5%) (Table 1). Among the people who utilized the services of 108-EMRI, beneficiaries were more from Khammam division - male (56.6%) and female (43.4%) and minimum from Kothagudem division - male (5.4%) and female (5.4%) (Table 2). The utilization of 108-EMRI services was highest in the month of June (11.13%) (Table 3).

Medical emergencies (MED) were more in the month of December (10.4%), surgical emergencies (SUR) in the month of April (9.9%), orthopedic emergencies (ORTHO) in the month of April (11.5%), pediatric emergencies (PAED) in the month of April (11.4%) and obstetric emergencies (OBG) in the month of March (9.4%) (Table 4). Pediatric emergencies were more common in the 0-5 age group, as expected. Whereas medical emergencies were more in the 15-29 age group (32.07%), Surgical emergencies were more in the 15-29 age group (33.86%), obstetric emergencies were more in 15-29 age group (96.53%) and

Table 1: Beneficiaries of 108-EMRI services - division wise

<i>Division</i>	<i>Frequency</i>	<i>Percent</i>
Khammam	32277	53.0
Kothagudem	10638	17.5
Palvoncha	10376	17.0
Bhadrachalam	7607	12.5
Total	60898	100.0

Table 2: Beneficiaries of 108- EMRI services by division and gender

<i>Division</i>	<i>Female</i>	<i>Male</i>	<i>Total</i>
Khammam	14004 (43.4)	18273 (56.6)	32277 (100)
Kothagudem	10066 (94.6)	572 (5.4)	10638 (100)
Palvoncha	3658 (35.3)	6718 (64.7)	10376 (100)
Bhadrachalam	1484 (19.5)	6123 (80.5)	7607 (100)
Total	29212 (48.0)	31686 (52.0)	60898 (100.0)

Figures in parentheses indicate row percentages

orthopedic emergencies were highest in the 30-44 age group (63.57%) (Table 5).

DISCUSSION

Among the emergencies, majority were pregnancy related constituting 17.9 percent, followed by RTA (Road Traffic Accidents) (13.8%), suicides (6.7%) and cardiac emergencies (3.9%). By attending 17.9 percent of

Table 3: Beneficiaries of 108-EMRI services-month wise

<i>Month</i>	<i>Frequency</i>	<i>Percent</i>
January	5269	8.7
February	4817	7.9
March	5633	9.2
April	5385	8.8
May	4584	7.5
June	6780	11.1
July	3773	6.2
August	4618	7.6
September	4964	8.2
October	4749	7.8
November	5085	8.4
December	5241	8.6
Total	60898	100.0

pregnant cases 108-EMRI has indirectly promoted institutional deliveries, ensuring skilled birth attendance, complications attended and as an effective Referral system. The ultimate goal of 108-EMRI is to reduce the average cost per ambulance trip to Rs. 450, provided free to every medical emergency needing help anywhere in India, and that too within 20 to 40 minutes, which is difficult but achievable by 2012.

CONCLUSION

EMRI is undoubtedly operationally effective system in reaching out to those who are in need. It has proved itself both in terms of quality and efficiency. EMRI is undoubtedly a historic landmark in the provision of health

Table 4: Distribution of beneficiaries of 108-EMRI services by month and specialty

<i>Month</i>	<i>Emergency</i>						<i>Total</i>
	<i>Medicine</i>	<i>Surgery</i>	<i>Gynaecology and Obstetrics</i>	<i>Paeditrics</i>	<i>Orthopaedics</i>	<i>Other</i>	
Jan	1684(32)	1201(22.8)	890(16.9)	65(1.2)	1044(19.8)	385(7.3)	5269(100)
Feb	1470(30.5)	1101(22.9)	823(17.1)	61(1.3)	1017(21.1)	345(7.2)	4817(100)
Mar	1604(28.5)	1337(23.7)	1033(18.3)	71(1.3)	1218(21.6)	370(6.6)	5633(100)
Apr	1289(23.9)	1374(25.5)	952(17.7)	88(1.6)	1331(24.7)	351(6.5)	5385(100)
May	1020(22.3)	1160(25.3)	873(19.0)	57(1.2)	1134(24.7)	340(7.4)	4584(100)
Jun	1712(25.3)	1237(18.2)	1014(15.0)	61(0.9)	1218(19.8)	1538(22.7)	6780(100)
Jul	1128(22.9)	941(24.9)	708(18.8)	49(1.3)	612(16.2)	335(8.9)	3773(100)
Aug	1534(33.2)	1050(22.7)	881(19.1)	65(1.4)	693(15.0)	395(8.6)	4618(100)
Sep	1596(32.2)	1289(26.0)	924(18.6)	49(1.0)	712(14.3)	394(7.9)	4964(100)
Oct	1703(33.5)	1097(21.6)	946(18.6)	55(1.1)	919(18.1)	365(7.2)	5085(100)
Nov	1703(33.5)	1097(21.6)	946(18.6)	55(1.1)	919(18.1)	365(7.2)	5085(100)
Dec	1877(35.8)	1055(20.1)	984(18.8)	75(1.4)	884(16.9)	366(7.0)	5241(100)
Total	18112(29.7)	13935(22.9)	10948(18.0)	772(1.3)	11612(19.1)	5519(9.1)	60898(100)

Figures in parentheses indicate row percentages

Table 5: Distribution of beneficiaries of 108- EMRI services by age-group and specialty

Age	Medicine	Surgery	Gynaecology and Obstetrics	Paeditrics	Orthopaedics	Other	Total
0-5	3(0.6)	2(0.4)	0(0)	473(94.4)	23(4.6)	0(0)	501(100)
6-14	893(34.1)	767(29.3)	9(0.3)	296(11.3)	581(22.2)	69(2.6)	2615(100)
15-29	5810(21.5)	4791(17.8)	10569(39.2)	3(0.01)	4272(15.8)	1537(5.7)	26982(100)
30-44	225(3.0)	0(0)	0(0)	0(0)	7382(97)	0(0)	7607(100)
45-59	3281(37.7)	2317(26.6)	12(0.1)	0(0)	1884(21.6)	1210(13.9)	8704(100)
>60	2811(47.4)	1339(22.6)	5(0.08)	0(0)	964(16.3)	809(13.6)	5928(100)
Total	18112(29.7)	13935(22.9)	10948(18.0)	772(1.3)	11612(19.1)	5519(9.1)	60898(100)

Figures in parentheses indicate row percentages

care in the nation. To its credit goes the achievement of bringing Emergency medical response on to the agenda of the nation. EMRI-108 services have been emulated by other states across India following its successful implementation in Andhra Pradesh. Looking at the utilization of emergency services there is a need to continue this type of services. One important step is to study the morbidity patterns, types of services and factors that facilitate service utilization of such type of services.

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REFERENCES

- From<<http://Indiabroadband.net/general-offtopic-discussions/11204-dial-108-all-emergency-situations-across-india.html>>(Retrieved on October 5,2009).
From<<http://andhranews.net/India/2008/July/26-EMRI-108-Emergency-Response-ServicesAndhra-Pradesh.asp>> (Retrieved October 4,2009).
From<<http://expresshealthcaremgmt.com/200608/focus01.shtml>> (Retrieved October 2,2009).
MOHFW, National Health Systems Resource Centre 2009. Report of the 1st Phase of the Study: study of emergency response service (EMRI Model) in selected states in India. New Delhi: MOHFW.
Official home page of GVK EMRI-108,emri.in. From <<http://www.emri.in/content/view/24/59/>> (Retrieved October 8,2009).