

Performance Evaluation of 108 Ambulances in Northern Hilly City of India

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Abstract

Original Research Article

Background: Today 108 Ambulances are providing integrated Emergency Response services and promptly respond to millions of emergencies and save lives of thousands of people. **Aim & objectives:** Aim of the study is to evaluate the performance of 108 ambulance service and its effectiveness in the hilly city of north India. **Material and methods:** The present study was done at Indira Gandhi medical college, Shimla (Himachal Pradesh) using secondary data for analyzing and interpretation for first quarter (Month Jan to March) for the year 2018. Data entry was done in Microsoft Excel and descriptive statistical analysis was done in Epi Info 7. **Results:** A total of 748 emergency patients was carried by 108 ambulance patients during the study period. Among them 55.08% were male and 30.88% were in the age group of 21-40 years. Maximum number of incidence occurred at home. Most common emergency type was abdominal in nature 18.98% while commonest presenting symptom was difficulty in mobility 51.60%. **Conclusion:** Every citizen of the state is very much proud for the services rendered by the Himachal Pradesh government, towards welfare of the people through 108 ambulance services.

Keywords: 108 Ambulances, emergency, performance evaluation, Shimla.

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INTRODUCTION

Terms like ‘The Golden Hour’ and the ‘Platinum Ten Minutes’ imply the importance of Emergency Medical Services (EMS) all over the world [1]. It is a well-accepted fact that a patient who receives basic care from trained professionals and is transported to the nearest healthcare facility within 15-20 minutes of an emergency has the greatest chance of survival [2].

Millions of emergencies end in a loss of life because the needy cannot afford ambulance services [3]. In order to remove the barriers of affordability that prevents the poorer sections of the society from accessing emergency services, free 24/7 emergency ambulance services “Dial 108 service” was launched in Himachal Pradesh in collaboration with the GVK Emergency Management and Research Institute with a vision to support and build capabilities to promptly respond to millions of emergencies and save lives nationally [4].

GVK provide quality pre-hospital care and transport of patient to the hospital. Today, 108 are synonymous with the best-in-class emergency service and have been acknowledged as the most efficient,

speedy, reliable, and caring service provider in its category [5]. The guiding operational principle of GVK EMRI’s 108 services is Sense, Reach and Care. It is a 24x7 service, which anyone can avail by dialing the number 108 on their phone during the case of any medical emergency [6]. The number 108 is a toll-free number and can be dialed from any phone, be it a mobile phone or a landline, at the time of an emergency, without any prefix or suffix. Help reaches the person within 20 minutes. Initially, the person who receives the call at Emergency Response Centre (ERC) takes down the nature of emergency and the location of the caller. Depending on the nature of the call, an ambulance is sent. This is done through the Emergency Response Centre [7]. The centralized Emergency Response Centre helps coordinate between the Dispatch Officer, Emergency Response Centre Physician and the Emergency Medical Technician (EMT) for getting guidance during transit. The entire service is free for any citizen [8].

Object of the Study

The present study aims to evaluate the performance of 108 ambulance service and its effectiveness in the hilly city of north India. This

analysis also provides insights on the data relating to lives saved by 108 ambulances.

MATERIALS AND METHODS

The present study was done at Indira Gandhi medical college; Shimla (Himachal Pradesh). This study has used secondary data for analyzing and interpretation for first quarter (Month Jan to March) for the year 2018.

Data entry was done in Microsoft Excel and descriptive statistical analysis was done in Epi Info 7.

RESULTS

According to present study a total of 748 emergency patients was carried by 108 ambulance to the IGMC Shimla in the first quarter of 2018 (Jan to March 2018) (Table 1).

Table-1: Month wise distribution of 108 patients

Month	Frequency	Percent (%)
Jan	197	26.3
Feb	270	36.1
Mar	281	37.6
Total	748	100.0

Among the socio-demographic variables of the patients 412 (55.08%) were male while 336 (44.92%) were females. Maximum patients (30.88%) were in the age group of 21-40 years. Among the patient maximum belong to general caste (48.93%) followed by backward

class (36.76), scheduled caste (12.43) and scheduled tribe (1.07). Occupation of many patients (33.42%) were not known while rest were housewife, students, employees, daily wagers, street children etc. Maximum patients were belonging to urban area (65.64).

Table-2: socio-demographic characteristics of 108 patients

Characteristics	Frequency	Percent (%)
Gender		
Male	412	55.08
Female	336	44.92
Age Groups		
< 20	104	13.90
21-40	231	30.88
41-60	225	30.08
61-80	145	19.39
>80	43	5.75
Caste		
General	366	48.93
SC	93	12.43
ST	8	1.07
OBC	275	36.76
Others	3	0.40
Not Known	3	0.40
Occupation		
Businessman	20	2.67
Dailywage Worker	49	6.55
Employee	44	5.88
Housewife	163	21.79
Self employed	68	9.09
Street child	12	1.60
Student	98	13.10
Transport Worker	3	0.40
Unemployed	41	5.48
Not known	250	33.42
Residential Area		
Rural	257	34.36
Urban	491	65.64

The study results showed that maximum number of incidence occurred at home, followed by

hospital (13.10%), highway (5.75%), public place (5.08%), roadside (3.88%) and workplace (3.61%).

Table-3: Incidence location of 108 patients

Incidence Location	Frequency	Percent (%)
Highway	43	5.75
Hospital	98	13.10
Public Place	38	5.08
Roadside	29	3.88
Residence	513	68.58
Workplace	27	3.61

The study finding showed that maximum number of emergency type were abdominal in nature (18.98%), followed by respiratory (13.24%),

cardiovascular (12.43%), trauma (non-vehicular) (11.90%), trauma (vehicular) (7.35%), fever(5.48%), etc.

Table-4: type of emergency of 108 patients

Type Of Emergency	Frequency	Percent (%)
Trauma(Vehicular)	55	7.35
Trauma(Non Vehicular)	89	11.90
Assault/Voilence	16	2.14
Burns/Fire	5	0.67
Industrial	7	0.94
Animal Bite		0.00
Accidental Poisoning	9	1.20
Cardiovascular	93	12.43
Stroke/Cerebrovascular	13	1.74
Epilepsy	11	1.47
Respiratory	99	13.24
Diabetic	9	1.20
Abdominal	142	18.98
Pregnancy Related	10	1.34
Neonatal	1	0.13
Pediatric	1	0.13
Fever All Type/Infection	41	5.48
Allergic Reaction	7	0.94
Unconscious Patients	21	2.81
Behavioral	1	0.13
IntentionalSelf Harm/ Suicidal		0.00
Environmental		0.00
Hazardous Material		0.00
Disaster	1	0.13
Others	117	15.64

When we take the pre hospital status of the emergency patients, the vitals of maximum patient

stable (92.11) while 7.62% patients had vital unstable and 0.27% had their vital unrecordable.

Table-5: Pre hospital status of 108 patients

Pre hospital care	Frequency	Percent (%)
vital stable	689	92.11
Unstable	57	7.62
Unreordable	2	0.27
Total	748	100.0

The study results shows that maximum number of patients present with difficulty in mobility (51.60%) followed by breathing (24.33%), vomiting (11.63%),

bleeding (9.89%), chest pain (8.29%), swelling (3.48%), semi-conscious(3.34%), unconscious etc (2.81%).

Table-6: presenting symptoms of 108 patients

Presenting symptoms	Frequency	Percent (%)
Unconscious	21	2.81
Bleeding	74	9.89
Difficulty In Mobility	386	51.60
Shock	2	0.27
Pregnancy Pains	21	2.81
Difficulty In Breathing	182	24.33
Difficulty In Vision	3	0.40
Difficulty In Speech	18	2.41
Loose Motion	17	2.27
Disarticulations/Amputation	0	0.00
Chest Pain	62	8.29
Swelling/Odema	26	3.48
Vomiting	87	11.63
Abnormal Behavior	13	1.74
Convulsions	13	1.74
Anaphylactic Shock	2	0.27
Semi-Conscious	25	3.34
Others	498	66.58

DISCUSSION

The result in the present study showed that, Utilization of 108 services was more commonly used by males 412(55.08%) age group of 21-40 years (30.88%). This is due to the fact that most of the female emergency patients went to separate gynecology and obstetrics hospital associated with IGMC. Also the young adults are more aware about the 108 services.

Among the patient maximum belong to general caste (48.93%) followed by backward class(36.76%), scheduled caste(12.43%) and scheduled tribe(1.07%) which is according to the demographic distribution of population in the shimla city[9].

Occupation of many patients (33.42%) were not known while rest were housewife, students, employees, daily wagers, street children etc. This finding shows that the occupation of the patients was not considered important by the EMT persons. Maximum patient belong urban area (65.64%). This is due the fact that most of the patients came from shimla city.

The study results showed that maximum number of incidence occurred at home (68.58), followed by hospital (13.10%), highway (5.75%), public place(5.08%), roadside(3.88%) and workplace(3.61%). This shows that this services are used both in home as well as referral service.

The study finding showed that maximum number of emergency type were abdominal in nature (18.98), followed by respiratory (13.24%), cardiovascular (12.43%), trauma (non-vehicular) (11.90%), trauma (vehicular)(7.35%), fever(5.48%) etc. The study done by Sunitha *et al.* [10] in Tamil Nadu has maximum emergency of pregnancy related followed by

trauma, abdominal and of chest pain? The difference is due to the fact that in the shimla city the pregnancy related emergency are gone to separate gynecology and obstetrics hospital.

When we take the pre hospital status of the emergency patients, the vitals of maximum patient stable(92.11%) while 7.62% patients had vital unstable and 0.27% had their vital unrecordable. This finding suggest that majority of these patients could have been managed by primary and secondary health institutions. This has led to unnecessary patient overload in this tertiary care institution.

CONCLUSION

There are immense requirements for the emergency ambulance services that extent the services to the needy in the “golden hour”. Every citizen of the state is very much proud for the services rendered by the himachal pradesh government, towards welfare of the people through 108 ambulance services.

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