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Evaluation Report on '108' Ambulance Services in Meghalaya



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Executive Summary:

'108' Ambulance Services started with the objective to provide comprehensive Emergency Response Services to the people of Meghalaya for prompt and better health care facilities particularly attending the emergencies relating to pregnant women, neonates, seriously ill patients and emergencies due to road traffic accidents, fire and law.

The '108' Ambulance Services was started on 2nd February 2009, through Public Private Partnership (PPP) for providing the services throughout the state round the clock 365 days in a year.

Since the '108' Ambulance Services are being run in the state for more than a decade now, it has been desired by the NHM, Meghalaya that the Regional Resource Centre for North Eastern States, (Branch of National Health System Resource Centre), Ministry of Health and Family Welfare, Government of India, Guwahati may be entrusted to conduct an assessment study of the service quality, response time, functionality, knowledge and skills of EMTs (Emergency Medical Technician) of the '108' Ambulance Services in the state.

For the study, out of 48 functioning '108' Ambulances in the state (as per the data received from 108 state HQ), 10 has been selected randomly for the study. '108' Ambulance Services were visited with predefined questionnaires and personal interview were conducted with the staff. Beneficiary perspective was also considered through a structured interview questionnaire.

As per the current MoU, the Agency (GVK EMRI) has taken over 31 Basic ambulances and 11 Advance Life Support (ALS) ambulances fully equipped with Medical and Non-medical equipment. But currently all the ambulances are of the category of BLS ambulances only as none of the Ambulances has necessary equipment like ventilators and AEDs installed and functioning.

On assessment, the knowledge and skills of the EMTs were not found up to the mark for management of the patients for pre-hospital care. The knowledge about case management of Road Traffic Accidents and pregnancy cases was also not satisfactory. It was also noted that the knowledge on sizing up the scene and ABC of the resuscitation process is actually very poor.

The conditions of the few vehicles evaluated were not good. The Force Trax models of the ambulances are more in deplorable conditions and need necessary attention. The stock books were found incomplete with a sense of insincerity on the part of EMTs and Pilots. The surgical items were found old, worn, rusty and unfit for use. The equipment like BP apparatus, stethoscope, thermometer, pulse-oximeter, scoops stretcher and collapsible stretcher were either not present or

damaged making it unusable. The vehicles were found kept in open without any shed/garage and thus affecting the life of the vehicles.

It was observed that the average number of trips undertaken by the 108 Ambulances in Meghalaya is 0.74/day with average 22 trips a month. Also, the average kilometer travelled by one ambulance per day is 56 kilometers. In terms of Average Response Time, in Urban areas it is 24 minutes and for Rural areas it is around 40 minutes, however, it was observed that for districts viz. South-Garo Hills the Average Response Time is 1 hour 10 minutes which does not satisfy the Golden Hour criteria. The Average Breakdown Time was noted to be 2.6% with highest break down time in South-Garo Hills as 5.9% and with least in East and North Garo Hills as 0.15% in the last FY 2020-21.

In relation to the Performance Indicators for Integrated Ambulance Command Centre, in the FY 2020-21, the total active calls attended were 48,762 but the ambulances were dispatched for 15,423 calls which amount to be 31.62% only. It was observed during evaluation that majority of cases handled by 108 ambulances were Pregnancy related cases i.e., 42%. Other major cases were cases of acute abdomen, fever and Road traffic accident.

Regarding beneficiary feedback recorded during evaluation, beneficiaries are satisfied with the free service of 108 but few reiterated the need to decrease the response time further for prompt care. Average call to scene time is below 30 minutes in 36% (4/11 beneficiaries) and within 60 minutes in 82% cases (9/11 beneficiaries). However, in 18% cases (2/11 beneficiaries) ambulances reached the scene after 60 minutes.

It was observed that the PPP partner have good co-ordination with the State Health Society, Meghalaya and regularly share the monthly status and performance with the state. However, there is no provision of monthly meeting with the state or district to review the critical points in performance. Also, there is a missing link with the District Health Society and 108 as no report is shared with the district directly. Also, real time status of the vehicle is not in access with the state officials of NHM to oversee the real time status of vehicle on the run.

It was observed during interview with staff of 108 that the EMTs work seven (07) days at a length and prefer seven (07) days off and by doing this they are working 24 x 7 on their on-duty days, which is actually not recommended. On visit to the quarters of EMTs and Pilots, the condition was found to be livable but needs quality improvement. In few cases the EMTs informed that personal security also is a matter of concern while shifting patients from far flung areas.

Regarding financial component, in the MoU of 2016, the contract opex rate was with Rs. 1, 37,700/- and at present (2021) the rate is around Rs 1, 66,617/per ambulance per month. Few penalties were mentioned in the MoU, however, it was observed there is no penalty clause for number of trip or distance covered/per day in the current MoU.

From a statement made in 2007 by TamorishKole, a former president of the Society for Emergency Medicine, India (SEMI), that *“with more than 100,000 road traffic related deaths, 98.5% ambulance runs transporting dead bodies, 90% of ambulances without any equipment/oxygen, 95% of ambulances having untrained personnel, most Emergency Doctors having no formal training in Emergency Medical Services, misuse of government ambulances and 30% mortality due to delay in emergency care, India portrays a mirror image of the U.S. of the 1960s. The good news is that Emergency Medical Services has taken firm root in India.”* But the same is not evident in Meghalaya till now.

Overall, it was ascertained that ‘108’ Ambulance services needs overhauling at the ground level and knowledge level of EMTs need to be improved at the earliest. The State and District Officers responsible for ‘108’ Ambulance services with GVK EMRI needs to check the ground level implementation and execution of the much-needed essential services for the betterment of the citizens of Meghalaya.

Introduction:

In India, almost 23% of all traumas that occurs are road traffic related, with 1374 accidents and 400 deaths taking place every day on Indian roads¹. About 77.2% of trauma cases relate to events as falls, drowning, agriculture related injuries and burns etc². Out of every onemillion people, 42800 die every year from sudden cardiac arrest and notably highest snakebite mortality estimating 30000 every year is also in India^{3,4}.

But prior to the year 1985, Emergency Medical Response Services (ERS) in the form of ambulances were not integrated uniformly in the Public Health Care Delivery System of the States but was rather limited to the Public Health Systems of a few Tier 1 cities and big corporate hospitals⁵.

Gradually, in 1989 the Honourable Supreme Court of India gave a big impetus to trauma care by its landmark judgement on public interest litigation by Parmanand Katara, the judgement, colloquially named after him, and directed the doctors and hospitals to provide treatment to road traffic accident victims without paper formalities necessary for other emergencies⁵. Owing to which Emergency Medical Services became a concern for few lesser-known hospitals and they also started non-governmental ambulance services for their clients.

The year 2005 changed the concept of Emergency Medical Services (EMS) in India and brought unalterable change by the initiative of Mr. B Ramalinga Raju, founder & chairman of Satyam Computer, when the company took up EMS as its corporate social responsibility. For the first time, Emergency Medicine and Research Institute (EMRI) launched '108' services in Andhra Pradesh.

After launch of National Rural Health Mission in 2005 and resources being available with the governments, the Emergency Medical Response Services via Dial '108' Ambulance Services were functionalized. Today, '108' ambulance services are available in around 27 States/UTs under NHM as well as State budget with fleet of 11,879 ambulances and '102/104' ambulance services are in 22 States/UTs with the fleet of 10716 ambulances with 47,000 employees (with 20,000 being medical professionals) under PPP mode covering cities and rural areas and providing emergency healthcare access care to 750 million people i.e., roughly three quarters of India's population^{6,7}.

The services through these ambulances are provided free of cost to the beneficiaries. The Dial '108' Ambulance Service was envisaged by creating a synergy among many platforms via single call centre integrating health, police, fire and disaster management services with merely an availability of a mobile phone in the hands of any person in the country bringing the life-saving services at the doorstep of the caller in case of any emergency including medical emergencies.

This is the way revolution began but what are the standards for these services and what ambulances should be used became the question. In the year 2005, once again the Honourable Delhi High Court intervened to force the capital region viz. Government of Delhi to lay down standards for ambulance services. At that point of time, the ambulance standards were taken from Ambulance Manufacturer Division, USA as India did not have any laid down standards.

In 2013, Ministry of Road Transport and Highways, GoI under Central Motor Vehicle Rules – Technical Standing Committee came out with Construction and Functional Requirements for Road Ambulances widely known National Ambulance Code and accordingly, Basic Life Support (BLS) and Advance Life Support (ALS) i.e Type C and D were chosen as per Automotive Industry Standard – 125.

The Type C Road Ambulance are – BLS Ambulance was defined as a vehicle ergonomically designed, suitably equipped and appropriately staffed for the transport and treatment of patients requiring non-invasive airway management and Type D Road Ambulance are – ALS Ambulance was defined as a vehicle ergonomically designed, suitably equipped and appropriately staffed for the transport and treatment of emergency patients requiring invasive airway management/intensive monitoring.

Currently in India, 27719 ambulances are functioning 24 x 7 throughout the country providing the emergency care services. These ambulances include ALS, BLS and patient transport vehicle category. Gradually with the aging of the emergency ambulance services, the standardization and quality of the services are now looked into for further improvement. Working on these components, this evaluation study was planned by the Government of Meghalaya.

The study covered the vital areas of ambulance services viz the condition of the vehicles, equipment of the vehicles demarcating the ALS/BLS category, knowledge of the EMTs, process and procedures of receiving the patient from the event site and gradually shifting the patient to the health facility. The study also emphasised on the average time taken by the ambulances in handling cases etc. The study envisaged to provide comprehensive evaluation of the ‘108’ Wheels of Hope Ambulance Service of the Meghalaya state.

'108' Ambulance Services in Meghalaya

The '108' Ambulance services' – Wheels of Hope started in Meghalaya on the 2nd February 2009 on mutual understanding with NHM, Meghalaya and ran for 8 years on nomination mode and was further extended by signing a Memorandum of Understanding (MoU) between Govt. of Meghalaya and GVK EMRI on 1st April 2016. The ambulance services were routed through Toll-Free number '108' throughout the state.

The state has now 45 ambulances with 5 backup ambulance vehicles of BLS category in the fleet.

The MoU signed on 1st April 2016 between GVK-EMRI and the Govt. of Meghalaya is based on the following objectives

1. To provide 24 x 7 Ambulance Services through 108 toll-free numbers across all districts in the state of Meghalaya.
2. Receive calls made on 1-0-8 number and respond to medical emergencies in the entire state of Meghalaya through an existing fleet of 42 plus 5 back-up Ambulances.
3. The Agency should take over a fleet of 31 Basic Life Support Ambulances (BLS) and 11 Advanced Life Support (ALS) Ambulances fully equipped with Medical and Non-Medical equipment.
4. Operate an exclusive 24X7 call centre for managing and coordinating ambulance services.
5. The scheme will ensure comprehensive Emergency Response Services (Medical, Health Care, Police, Fire) using single toll-free number, training facilities and technology.
6. Provided trained manpower and prehospital care that will stabilize the patients and then transport them to the nearest Government/ Govt aided/ Army within the shortest reasonable possible time.
7. Ensure normal response time as given under the Clause Operational Parameter, Penalty, etc.

The costing for the services was decided as one time capex if new vehicles are added in the existing fleet and monthly opex cost on reimbursement basis by the State Government wherein Annual escalation and rates payable in years 2,3,4 and 5 on Wholesale Price Index on the following formula:

Revised Rate = Quoted per-vehicle-per-month rate x (WPI in month 13 after the Agreement date / WPI on the Agreement Date)

Study design and Rationale of the Study:

As the '108' – Wheels of Hope ambulances services have crossed a decade under the Govt. of Meghalaya, it has sought a third-party (requested to RRC-NE by MD, NHM, Meghalaya vide letter No. DHS/MCH&FW/NHM/ERS/29/2020-21/1715 dated the 18th of August 2021) evaluation of the '108' ambulance services in the state of Meghalaya to:

1. Assess the overall quality and performance of the '108' ambulance services as per the objectives in the Memorandum of Understanding
2. Assess the skill levels of the deployed human resources and the initiatives undertaken by GVK-EMRI for their capacity building
3. Assess the availability of functional Infrastructure (IT, equipment, vehicles etc.) as per the conditionalities of the MoU

Keeping this in consideration, RRC-NE conducted an assessment evaluation of the '108' ambulance services in state of Meghalaya as per the following objectives:

Objectives of the Evaluation:

1. To assess the quality and performance of the '108' Ambulance Services under NHM in the State of Meghalaya based on **Key Performance Indicators (KPI)** developed keeping in consideration the objectives of the MoU and the conditionalities of the Record of Proceedings of the State Program Implementation Plan of the FY 2021-22.
2. To assess the skill levels of the EMTs of '108' Ambulance Services and the measures undertaken by GVK-EMRI for their continued capacity building.
3. To identify the gaps in available infrastructure, equipment, and service delivery of the '108' Ambulance Services.
4. To assess the impact of '108' Ambulance Services through beneficiary's perspective, in terms of accessibility, acceptance, utilization and accountability.

Study Area/Domain/Population:

For the study, South-West Garo Hills, West Garo Hills, North Garo Hills, East Khasi Hills and West Jaintia Hills districts of Meghalaya has been selected as per the availability of the '108' Ambulance Workstations. The state has 50 functional units of '108' Wheels of Hope Ambulances with a population of 2,964,007 (as per Census 2011), by means of which, 1 ambulance is catering a population of 59,280 in a given time, approximately.

Accordingly, 10 functional units were selected as per the availability of the emergency vehicles from different stations i.e., 20% of the total fleet for the evaluation.

Study Period:

October 2021 to January 2022

Methodology:

The study design selected was Cross sectional with Mixed Methodology Approach employing structured and semi-structured checklists to cover the various thematic areas as per the mentioned objectives.

Tools for data collection:

The study incorporated multiple tools for analysing data:

1. Checklists to assess the following
 - a) The performance and efficiency of the ambulance services
 - b) Skills of the EMTs
 - c) Infrastructure of the Dial '108' Ambulance Services
 - d) Beneficiaries of the services
2. Data analysis methods:
 - a) Quantitative data collected from all sources was analysed by applying Excel software of Microsoft
 - b) Qualitative data collected from all sources was analysed by thematic analysis method
 - c) Secondary data collected from GVK-EMRI / State Nodal Office for '108' Ambulances collected for cross verification

Major heads of the evaluation were:

1. Administrative Headquarters and Call Center of the '108' Ambulance Services in the State to assess their performance as per the KPIs
2. 20% of all the BLS / Other ambulances operational under '108' in the state of Meghalaya to assess their KPIs and equipment availability / functionality
3. 10% of the EMTs posted in state of Meghalaya to assess their knowledge / skills
4. Beneficiaries of '108' ambulance services from Meghalaya

Inclusion criteria/exclusion criteria:

While selecting beneficiaries from the '108' Ambulance Services only those who have utilized / dial '108' Ambulance Services at least once or more were to be considered for the evaluation.

Limitations:

Due to the limited timeframe & available manpower at RRC-NE the assessment process covered only 20% of the vehicles and 10% of EMTs of the state of Meghalaya for the assessment / evaluation of the EMTs.

Key observations:

Currently 108 ambulance services in the state of Meghalaya are run on Public Private partnership(PPP) mode with GVK Emergency management and research Institute since April 2016. Duration of the project as per MoU is 5 years and extendable for a period of another 5 years subjected to concurrence of both the parties. 108 services in Meghalaya started with a fleet of 42 plus 5 back-up ambulances deployed strategically across the state of Meghalaya supported with centralized call center situated in Shillong. Currently as on November 2021, state has 45 plus 5 back up functional ambulances. Out of those 23 ambulances are new i.e., procured within last 2 years and rest of the ambulances are 7-10 years old.

Key observationsthematic area wise:

During the evaluation Ten (10) teams of 108 Ambulances were visited covering district of East Garo Hills, North Garo Hills, South West Garo Hills, East Khasi Hills and West Jaintia Hills. The teams of 108 Ambulances were visited with predefined questionnaire and personal interview with the EMTs.

Vehicles and Team Assessed:

Table 1:

SL.	Vehicle Registration Number	Ambulance Status (ALS/BLS)	EMT present (Yes/No)	Pilot (Yes/No)
1	ML 01 7985	BLS	Yes	Yes
2	ML 01 7521	BLS	Yes	Yes
3	ML 01 7720	BLS	Yes	Yes
4	ML 01 7122	BLS	Yes	Yes
5	ML 01 7723	BLS	Yes	Yes
6	ML 01 7469	BLS	Yes	Yes
7	ML 01 7473	BLS	Yes	Yes
8	ML 01 7969	BLS	Yes	Yes
9	ML 01 7713	BLS	Yes	Yes
10	ML 01 7714	BLS	Yes	Yes

Location of 108 Ambulances:

During the assessment 10 ambulances were visited in Garo Hills area, East Khali Hills and West Khasi Hills district respectively. The 108 Ambulances are stationed in chosen Health Facility citing the parking/taxing area availability and dwelling for the EMTs and Pilot of the vehicle. The vehicle is supposed to cover the 30 km radius in and around the stationed Health Facility for the services. **It was learned that even though the vehicles are parked inside the Health Facilities, but they are**

kept in open only without the facility of any garage/shed. The EMTs and Pilots are provided some accommodation by the In-Charges of the Health Facility on demand.

Human resource in 108 Ambulances:

State has fleet of 50 ambulances and human resource for one ambulance is at the ratio of 2.5 EMT/driver per ambulance. Ideally there should be 125 EMTs and 125 drivers but currently there is vacancy of 18 EMTs and 19 drivers in the state. **It was observed in one of the unit in West Khasi hills is manned with only one EMT and one driver instead of recommended 2.5.**

Table 2:

Type of Human resource	Total Number
Emergency Medical Technician Basic	95
Emergency Medical Technician – APGDEC	12
Driver	106

Training of Human resource:

Type and duration of training given by GvK:

Type of Training (For EMTs)	Duration Of Training
Post Graduate Diploma In Emergency Care	2 Years
EMT Foundation Training	52 days
EMT Refresher Trainings	2 days every six months
Basic Life Support Training	1 day
Basic Life Support in Obstetrics Training	1 day
International Trauma Life Support Training	1 day
Advance Life Support	15 days
Type of Training (Pilots)	Duration Of Training
Pilot Foundation Training	5 days
Pilot Refresher Training	2 days

Source: As per the information shared by NHM Meghalaya vide letter No. DHS/MCH&FW/NHM/ERS/29/2020-21/ CCIQ dated 18th August, 2021

GvK EMRI is one of the pioneers in Emergency Medical Services and they have their own training curriculum. Foundation module of EMTs has 448 parts and covers 30 different program topics. Currently similar courses run by Ministry of Skill Development and Entrepreneurship, GoI under the

name of EMT- Basic which is of the duration of 1000 hours(173 hours theory, 211 hours practical and 660 hours internship) for graduates with basic understanding of Biology and Science.

It was observed that the manpower of each ambulance unit is trained by GVK EMRI. The basic qualifications of the EMTs interviewed were at least science stream in 10+2 with graduation as a higher education. All the EMTs were foundtrained in EMT-Foundation Training Programme which is of the duration of 52 days as per the GVK EMRI officials. Of these total 52 days 32 days are for classroom training, 10 days is for hospital based training and 10 days is for field training. Out of total 107 EMTs, 12 EMTs were also trained in APGDEC(Advance Postgraduate Diploma Course in Emergency Care) which is for a duration of 2(Two) years. Also there is provision of refresher training of the EMTs every 6 months. The drivers also have a Pilot-Foundation Training Programme which is for duration of 5 days as cited by the drivers during interview. It was observed that the training module of GVK EMRI is elaborate and has all the practical components included for Emergency care.However it was observed while interviewing the EMTs that the duration of actual induction training is variable and ranges from 60 days to 105 days, may be due to recall bias, which is detailed below.

Table 3:

SL	Vehicle Registration Number	EMT	Trainings obtained	Duration
1	ML 01 7985	Yes	Induction Training	105 days Induction and 9 days hands-on refresher training
2	ML 01 7521	Yes	Induction Training	60 days Induction and Refresher of 2 days
3	ML 01 7720	Yes	Induction Training, APDGEC	60 days Induction, 2 years APDGEC with 2 days refresher twice in a year
4	ML 01 7122	Yes	Induction Training, ALS, APGDEC	2 years APGDEC,60 days Induction, 7 days ALS and 7 days refresher/year
5	ML 01 7723	Yes	Induction Training, APGDEC	60 days Induction and 2 years APGDECand refresher training twice in a year
6	ML 01 7469	Yes	Induction Training	90 days Induction with refresher training twice in a year
7	ML 01 7473	Yes	Induction Training	60 days Induction and 2 days refresher
8	ML 01 7969	Yes	Induction Training	80 days Induction and 2-3 days refresher/ twice every year
9	ML 01 7713	Yes	Induction Training	90 days Induction and 3-5 days refresher / twice every year
10	ML 01 7714	Yes	Induction Training, ITLS, ALS	90 days Induction, 30 days ITLS and 7 days ALS and 7 days refresher online

Type of Ambulances(ALS/BLS) and equipment available:

As per the current MoU, the Agency(GVK EMRI) has taken over 31 Basic ambulances and 11 Advance Life Support (ALS) ambulances fully equipped with Medical and Non-medical equipment. **But currently all the ambulances are of the category of BLS ambulances only as none of the Ambulances has necessary equipment like ventilators and AEDs installed and functioning.**Also, basic equipment like BP apparatus, Digital thermometer and Pulse Oxymeter are also non-functional in few units of Garo Hills region.As per the Agency (GVK EMRI) all the ALS equipment are beyond repair and proposed for replacement to the Government. It was informed by the GVK staff of Meghalaya that 444 Medical Equipment and another 115 Non-medical items which are beyond Economic repair (BER) since year 2018 amounting to a total cost of around Rs. 60.00 Lakhs have not been replaced, though repeated requests for replacement had been made with NHM, Meghalaya.

Equipment availability ambulance wise:

The equipment in the vehicles is checked by an internal auditor on monthly basis. Stock registers are maintained in all the vehicles evaluated but **the stock registers were found to be incomplete and partially filled** with no vehicle numbers, dates and signatures by the persons who have filled them. In some stock registers different vehicle details were mentioned. The variables were not filled as per the marked fields in the checklist. Thus, the exact stock position of surgical & medical equipment and non-medical items remain incomplete which is over and above the earlier mentioned BER equipment.

On physical verification of the equipment, it was noted that many splints and masks are age old and never ever used and collapsible stretchers were permanently broken or fixed i.e., not used to shift the patient which should not be the case.

In some vehicles, the spare tyre/stepney wheel was found kept inside the vehicle making it difficult for the EMTs to move around inside the vehicle which should be avoided.

The spine board is normally used as the stretcher instead of collapsible wheeled ambulance stretcher present in few vehicles.

The positioning of the air conditioners was also not clear i.e., in few vehicles the patient side cabin had air conditioning and in few pilots' side cabin had air conditioning.

A total of 4,369 pregnancies were handled by the 108 ambulances in the year 2020-21, which presents the probability of deliveries occurring while a pregnant lady is in-transit. However basic equipment required for providing first aid / resuscitation to the new-borne in case of emergencies

were not available in few of the ambulances surveyed (eg- Mucus extractor or bulb suction, nebulizer etc. were missing)

The knowledge of on spot medication was found to be very poor. The EMTs informed that Emergency Response Call Person (ERCP) helps them with the medication part but in absence of ERCP, the Techs try not to give any intervention.

Table 4:

SL	Equipment for BLS ambulance	Vehicle Registration Number									
		ML 01 7720	ML 01 7985	ML 01 7122	ML 01 7521	ML 01 7723	ML 01 7473	ML 01 7713	ML 01 7469	ML 01 7969	ML 01 7714
1	Portable Oxygen Cylinder	Yes (not functional)	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes
2	Self-inflating Bag (250-500) with reservoir	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
3	Self-inflating Bag Mask (0,1)	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
4	Bulb suction or Mucous Extractor	No	No	No	Yes	Yes	Yes	No	Yes	Yes	yes
5	Glucometer	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
6	Glucometer strips	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
7	Nebulizer	No	No	Yes	No	No	No	No	No	No	No
8	Digital Thermometer	Yes (damaged)	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
9	Stethoscope	Yes (damaged)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes (damaged)
10	Pulse Oximeter	No	Yes	Yes	No	No	No	No	No	No	Yes
11	AED	No	No	Yes	No	No	No	No	No	No	No
12	Collapsible Stretcher	Yes (damaged)	Yes	Yes	Yes	Yes	Yes (damaged)	Yes	Yes	Yes	Yes
13	Scoop Stretcher	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
14	Spine Board	Yes (head blocks missing)	Yes	Yes	Yes	Yes	Yes(head blocks missing)	Yes	Yes	Yes	Yes
15	BP apparatus	Yes (rusted)	Yes	Yes	Yes	Yes	Yes (damaged)	Yes	Yes	Yes	Yes (damaged)

Performance of the ambulances:

It was observed that the average number of trips undertaken by the 108 Ambulances in Meghalaya is 0.74/day with average 22 trips a month. Also, the average kilometer travelled by one ambulance per day is 56 kilometers.

In Table 5 and 6 details about district wise segregation is mentioned and total number of cases handled per year by the 108 Ambulances, respectively.

Table 5: Average number of trips and average kilometres travelled per day (trips / kms)

TOPICS	2018-19	2019-20	2020-21	April-Sep 2021-22
East-Garo /North Garo Hills	1.12/60.35	0.64/34.57	0.54/36.19	0.42/35.01
East-Khasi Hills	1.91/67.37	1.41 /50.53	1.34/58.53	1.78/66.4
East/ West-Jaintia Hills	0.98/67.82	0.76/68.45	0.82/80.87	0.9/87.45
Ri-Bhoi District	1.35/70.55	1.00 / 47.77	0.60 / 59.73	0.76/59.7
South-Garo Hills	0.53/22.81	0.42 / 23.96	0.39 / 28.42	0.19/35.8
South West/ West-Garo Hills	0.96/52.88	0.81/53.90	0.72/51.02	0.58/38.5
South West/ West-Khasi Hills	0.98/77.33	0.92/65.25	0.79/75.51	0.80/77.5

Source: GVK EMRI state HQ

The above table highlights the average trips per day which ranges from a maximum of 1.91 trips per day and a minimum of 0.19 trips per day. The utilization of services varies among districts surveyed especially for the districts of South Garo Hills, East and North Garo Hills. Though during the study the reason for less number of trips were not evaluated but the probable reasons for lesser number of trips could be:

- Remoteness of the location leading to minimal uptake of services by the community as travel time is more.
- Bad road connectivity to reach on site during emergency
- Poor Mobile Network connectivity in few areas
- Apprehension in the community about the lack of availability of adequate services in the nearest public health facility

Table 6: Total cases handled per year (2018-Sep 2021)

TOPICS	2018-19	2019-20	2020-21	April-Sep 2021-22
East-Garo /North Garo Hills	810	407	506	207
East-Khasi Hills	9314	6258	7626	4385
East/ West-Jaintia Hills	1841	933	1482	812
Ri-Bhoi District	2717	1471	2095	940
South-Garo Hills	141	87	131	58
South West/ West-Garo Hills	2137	1748	1988	858
South West/ West-Khasi Hills	1901	1129	1851	993

Source: GVK EMRI state HQ

In terms of Average Response Time in Urban areas is 24 minutes and for Rural areas is around 40 minutes which is within the permissible limits as per MoU, however, it was observed that for districts viz. South-Garo Hills the Average Response Time is 1 hour 10 minutes for Rural areas.

It was also observed from the Log Books of the Pilots that on an average 5-6 hours is being taken for Inter Facility Transfer (IFT) during which the vehicle remains busy and any other emergency cases arising during that period cannot be handled by the designated vehicle leading to call abandoned (especially for Garo Hills and Jaintia Hills region). It is suggested to utilize other fleet of state owned Patient Transport Vehicle (PTV) for IFTs and keeping the 108 ambulances for emergency cases only.

The Average Breakdown Time was noted to be 2.6% with highest break down time in South-Garo Hills as 5.9% and with least in East and North Garo Hills as 0.15% in the last FY 2020-21.

Table 7: Average response time in Rural and Urban areas:

TOPICS	2018-19	2019-20	2020-21	April-Sep 2021-22
Average response time (Urban) per year (2018-Sep 2021)				
Average call to scene time per month				
East-Garo /North Garo Hills	00:18:03	00:14:59	00:21:32	00:11:07
East-Khasi Hills	00:16:45	00:17:25	00:21:02	00:17:49
East/ West-Jaintia Hills	00:26:27	00:31:03	00:29:55	00:27:14
Ri-Bhoi District	00:12:44	00:09:34	00:29:21	00:24:40
South-Garo Hills	00:23:45	00:29:12	00:28:42	00:19:54
South West/ West-Garo Hills	00:17:58	00:23:04	00:25:36	00:21:03
South West/ West-Khasi Hills	00:08:04	00:23:03	00:14:29	00:16:59
Average call to hospital time per month (Urban)				
East-Garo /North Garo Hills	01:02:07	01:20:43	00:50:39	00:29:38
East-Khasi Hills	00:34:15	00:33:04	00:32:12	00:29:52
East/ West-Jaintia Hills	01:20:54	01:32:49	01:09:05	01:20:07
Ri-Bhoi District	01:10:42	01:05:23	00:45:02	01:07:25
South-Garo Hills	00:54:05	01:08:30	00:56:01	00:51:05
South West/ West-Garo Hills	00:39:59	00:58:12	00:34:23	00:41:10
South West/ West-Khasi Hills	02:03:17	02:15:40	01:40:59	01:08:15
Average Response time (Rural)				
Average call to scene time per month				
East-Garo /North Garo Hills	00:37:25	00:35:20	00:38:04	00:29:43
East-Khasi Hills	00:26:36	00:28:38	00:31:06	00:26:04
East/ West-Jaintia Hills	00:29:31	00:27:54	00:32:43	00:26:54
Ri-Bhoi District	00:23:17	00:25:48	00:39:26	00:30:59
South-Garo Hills	00:56:33	00:51:34	01:10:55	00:52:06

TOPICS	2018-19	2019-20	2020-21	April-Sep 2021-22
South West/ West-Garo Hills	00:37:25	00:35:20	00:38:04	00:29:43
South West/ West-Khasi Hills	00:30:23	00:28:51	00:33:27	00:30:05
Average call to hospital time per year(Rural)				
East-Garo /North Garo Hills	01:32:23	01:23:11	01:26:11	01:23:17
East-Khasi Hills	00:58:49	00:58:00	00:56:33	00:53:25
East/ West-Jaintia Hills	00:57:17	00:53:59	00:55:51	01:01:20
Ri-Bhoi District	01:11:44	01:12:06	01:23:38	01:12:59
South-Garo Hills	02:16:18	02:24:26	02:16:20	02:11:20
South West/ West-Garo Hills	01:17:29	01:19:14	01:18:48	01:20:09
South West/ West-Khasi Hills	01:20:58	01:27:23	01:27:46	01:11:49
Total breakdown time per ambulance per year (2018-Sep 2021)				
East-Garo /North Garo Hills	3.01%	5.54%	0.15%	0.35%
East-Khasi Hills	7.33%	5.49%	3.00%	0.39%
East/ West-Jaintia Hills	11.37%	3.67%	3.42%	0.43%
Ri-Bhoi District	7.26%	3.89%	0.79%	3.40%
South-Garo Hills	8.50%	0.13%	5.91%	0.05%
South West/ West-Garo Hills	8.92%	7.60%	3.08%	2.06%
South West/ West-Khasi Hills	2.28%	4.46%	1.53%	0.42%

Source: GVK EMRI state HQ

In relation to the Performance Indicators for Integrated Ambulance Command Centre, in the FY 2020-21, the total active calls attended were 48,762 but the ambulances dispatched were 15,423 which amount to be only 31.62%.

Interestingly, in the FY 2019-20, total numbers of calls received were 99,972 and total calls answered were 1,03,055 which amounts to 3,083 more calls being received. The reason for this disparity may be due to faulty data entry, poor record maintenance and lack of internal scrutiny by the 108 call center. This needs to be regularly monitored by the 108 management to improve the quality of data at the call center.

Table 8: Performance Indicators for Integrated Ambulance Command Centre:

TOPICS	2018-19	2019-20	2020-21	April-Sep 2021-22
Total number of calls received	110266	99972	132836	73431
Total number of calls answered	110198	103055	132290	72843
Total number of effective calls	40642 (36.88%)	35487 (34.43%)	48762 (36.85%)	24859 (34.12%)
Total number of calls dropped (UAC)	68	468	546	588

TOPICS	2018-19	2019-20	2020-21	April-Sep 2021-22
Total number of calls missed	0	0	0	0
Total number of calls valid (UAD) Un-availed Dispatch	168	136	131	58
Total number of calls where ambulances were dispatched	18663 (45.92%)	12412 (34.97%)	15423 (31.62%)	8367 (33.65%)
Total number of calls abandoned (vehicles not dispatched) VB- Vehicle busy	160	190	260	115
Call Response Performance				
Average Call Response Time (AHT)	00:01:08	00:01:17	00:01:38	00:01:38
Call Response time 1 st Ring % (Within 2 secs)	99.29%	99.05%	95.11%	95.92%
Call Response Time 2 nd Ring % (2secs- 5 secs)	2.47%	0.37%	0.60%	1.01%
Call Response Time 2 nd Ring % (After 5 secs)	0.39%	0.67%	4.72%	3.29%

Source: GVK EMRI state HQ

Dial 108 Ambulance Services and Patient Feedback Analysis:

Patient feedback was recorded through a predefined questionnaire. A total of 11 beneficiaries were interacted over phone to know about their perception about 108 services. 108 services have been used during emergency and 72%(8/11 beneficiaries) of the beneficiaries got the call connected in first attempt itself. In 10 out of 11 cases ambulances picked the beneficiary from their home. Average call to scene time is below 30 minutes in 36% (4/11 beneficiaries) and with within 60 minutes in 82% cases (9/11 beneficiaries). However, in 18% cases (2/11 beneficiaries) ambulances reached the scene after 60 minutes. However, in 90% cases ambulance reached the first health facility with 60 minutes. In 10 out of 11 cases interacted ambulances are basically used for transporting the patient and no medication provided during the trip to the beneficiary. Health facility was selected by the beneficiary with average time to reach hospital being 30-60 minutes. 72%(8/11) of the beneficiary has MHIS card(Megha health insurance card). No money has been asked by the 108 Ambulance staff in any of the cases. Beneficiaries interacted were satisfied with the free service of 108 but few reiterated the need to decrease the response time further for prompt care.

Vehicle status:

Out of the total fleet, 23 ambulances are newly procured within last 2 years. All other ambulances running are around 7-10 years old. Out of the 11 vehicles evaluated (both new and old) corrosion has been observed, which may be due to repeated sanitization done to the vehicles during COVID-19

surgeand may be due toparkingunder the open sky in the health facility premises. Painting is needed in most of the vehicles for the interior corrosion especially for Garo Hills region vehicles. The spare tyre/stepney wheel was located inside few of the ambulances which is not the place marked for the spare tyres for the vehicle thus, occupying unnecessary space and creating obstruction in the patient and EMT movements inside the vehicle. Vehicle hand over-take over register is also not found to be updated in few places of Garo hills ambulances. The Force Trax models of the ambulances are in more deplorable conditions and need necessary attention. During evaluation it was observed that the new vehicles were being serviced every month by the designated service engineer of GvK EMRI. But the older vehicles face the issue of high maintenance cost due to lack of designated service center especially in Garo Hills region.

Knowledge assessment:

For the assessment of basic knowledge of EMTs, multiple choice questions were asked to the EMTs with passing marks kept 50% and it was noted that EMTs were not confident in handling the questions and needed explanation on many accounts. Out of 11 EMTs interviewed 10 scored above 50%.

The EMTs made specific mistakes on the query of Golden Hour concept, full form of SAMPLE scale, normal respiration rates, knowledge of normal delivery stages and process, scene-stabilization and normal physiology-pathology of human body.

Table 9: Evaluation Score for MCQs

SL.	Vehicle Registration Number	Marks obtained by EMT (Total marks 30)	Percentage%
1	ML 01 7985	11	37%
2	ML 01 7521	18	60%
3	ML 01 7720	21	70%
4	ML 01 7122	21	70%
5	ML 01 7723	24	80%
6	ML 01 7469	18	60%
7	ML 01 7469	20	67%
8	ML 01 7473	17	57%
9	ML 01 7969	20	67%
10	ML 01 7713	23	77%
11	ML 01 7714	19	63%

Skill for Patient Assessment/Management by the Dial 108 EMT:

For assessing the skills of EMTs, the questionnaire was prepared on the basics from EMT course under Model Curriculum, Emergency Medical Technical, National Skill development Cooperation, Ministry of Skill development & Entrepreneurship, Government of India with 80% marks as qualifier and EMTs were asked to explain the topic as per the actual that they perform.

The questionnaire includes topics like sizing up the scene in case of emergency, resuscitation, history taking and assessment of the system/affected body parts.

Based on the analysis of the replies to the questions to assess the quality of the EMTs, the finding as per their performance can be categorized as follows:

1. General assessment/Management of patient:
 - a. **Sizing up of the scene:** the performance of the EMTs in regards to their ability of securing the site in case of emergency is found to be poor. This includes lack of knowledge regarding initial assessment of the scene, steps taken for control of the environment, when and whom to call for back-up if required and to plot the course of action for management of the emergency. Also, they lacked the knowledge of the steps to follow for initial stabilization of the patient including immobilization of the spine.
 - b. **Primary Assessment and Resuscitation:** The theoretical knowledge base and the ability to practically demonstrate steps for primary assessment of the condition of the patient and the processes for resuscitation were found to be lacking. This includes the lack of knowhow regarding the processes of securing airway, breathing and circulation,
 - c. **History Taking:** The knowledge about the processes involved in initial history taking and gathering other relevant information based on signs and symptoms was observed to be quite adequate among the interviewed EMTs.
 - d. **Secondary Assessment:** The EMTs were unable to demonstrate adequate knowledge and skill regarding the processes to follow for a systematic examination of the patients. This includes the inability to differentially associate signs and symptoms to probable systemic involvement such as the CNS, CVS or Pulmonary systems etc.

Only 1 of the EMT out of 11 managed to score above 80% and 5 EMTs scored below 50% in the evaluation.

Table 10: Evaluation of score for skill for Patient Assessment/Management

SL.	Vehicle Registration Number	Marks obtained by EMT (Total marks 43)	Percentage %
1	ML 01 7985	20	46.5 %
2	ML 01 7521	27.5	64.0 %

SL.	Vehicle Registration Number	Marks obtained by EMT (Total marks 43)	Percentage %
3	ML 01 7720	26.5	61.6 %
4	ML 01 7122	24	55.8 %
5	ML 01 7723	38	88.4 %
6	ML 01 7469	12	27.9 %
7	ML 01 7469	26	60.5 %
8	ML 01 7473	08	18.6 %
9	ML 01 7969	16	37.2 %
10	ML 01 7713	29	67.4 %
11	ML 01 7714	15	34.9 %

Skill for Management of Bleeding, Trauma, Cardiac Emergency, Obstetrics & Neo-Natal Emergency:

For the management of actual trauma at the scene, the basics of trauma management was asked to the EMTs surveyed covering the topics of bleeding, trauma, cardiac emergency and obstetrics and neo-natal cases with 80% marks as qualifier.

1. Assessment of Management of Bleeding, Trauma, Cardiac Emergency, Obstetrics & Neo-Natal Emergency:

- a. The EMTs had the requisite knowledge in regards to initial management of acute bleeding which includes the knowhow about tourniquet application and pressure bandaging
- b. The EMTs lack the knowledge about the systemic processes involved in the emergency management of trauma. As for example, while assessing for head & neck injury, they failed to mention the important components such as inspection and palpation of the cervical spine, detection of jugular vein distension, oro-facial area inspection, detection of tracheal deviation etc.
- c. During the assessment process, the EMTs were made to demonstrate the steps of providing CPR at the site of emergency. It was observed that they lacked knowledge and skill to successfully provide CPR which included lack of knowhow of positioning of the rescuer, rate and depth of chest compressions, adequate volume and rate of breaths etc.
- d. In regards to managing emergency delivery, the EMTs lacked the knowledge about the stages of labour, post-delivery assessment of baby utilizing APGAR score and overall resuscitation/stabilization processes for newborn. No EMT was able to explain the process of placenta delivery and post-partum procedures.

None of the EMTs scored above 80% and 5 EMTs scored less than 50% in the evaluation.

Table 11: Evaluation of score for skill for Skill for Management of Bleeding, Trauma, Cardiac Emergency, Obstetrics & Neo-Natal Emergency

SL.	Vehicle Registration Number	Marks obtained by EMT (Total marks 38)	Percentage%
1	ML 01 7985	12.5	32.9%
2	ML 01 7521	19.5	51.3%
3	ML 01 7720	20.5	53.9%
4	ML 01 7122	23	60.5%
5	ML 01 7723	29	76.3%
6	ML 01 7469	9	23.7%
7	ML 01 7469	19	50.0%
8	ML 01 7473	8.5	22.4%
9	ML 01 7969	10	26.3%
10	ML 01 7713	22	57.9%
11	ML 01 7714	12	31.6%

Coordination with state and district health society:

GVK EMRI found to have good co-ordination with the State Health Society and they share the monthly status and performance regularly with the state. However, there is no provision of monthly meeting with the State or District to review the critical points in performance. Also, there is a missing link with the District Health Society and 108 as no report is shared with the District directly. Also, real time status of the vehicle cannot be accessed by the State Officials of NHM to oversee the real time status of vehicle on the run. State Nodal Officer, 108 ambulances informed that there should be a provision of dashboard with access to NHM officials for monitoring of the 108 ambulances on a live mode.

Coordination with Fire and Police Services:

Regarding the coordination with Fire and Police services, it was informed that the call center informs the nearest police station. One person from police is also stationed at the call center for proper coordination.

Drugs and consumables:

Drugs and consumables are supplied by the GVK side to the ambulances on monthly basis but there is no fixed date for the supply. Also, the EMTs indent lump sum number of drugs, but **no demand-based indenting is followed**. There is **shortage of drugs observed in almost all the ambulances**

evaluated especially for Garo Hills region. Drugs like Paracetamol tablet, Hydrocortisone, Theophylline, Lasix and even Povidone Iodine solution is found short of supply. Among consumables crepe bandage and dressing pads were found inadequate. **BMW guidelines are not followed as per protocol** and disposable bags for waste management (Red and Yellow) were not found in many places.

Bio-Medical Waste Management:

The bio-medical waste management is an integral part of health system for safety to the community and environment. During the assessment of 108 ambulances, it was noted that many EMTs were not aware of bio-medical waste management criteria and uses of colour coded bins. The EMTs were also not following the bio-medical waste management protocols.

Role in COVID:

108 ambulance services were extensively used for COVID-19 duty for patient transport. Ambulances helped the state in transporting patients from far flung areas in the state maintaining proper COVID-19 protocols. Till November 2021, a total of 8535 cases have been transported by 108 Ambulances in the state as informed by GVK EMRI state head.

108 Ambulance Services and commonly faced Diseases:

It was observed during evaluation that majority of cases handled by 108 ambulances were Pregnancy related cases i.e., 42%. Other major cases were cases of acute abdomen, fever and road traffic accident. It was also noticed that major pregnancy related services were utilized by East-Khasi Hills and least by South-Garo Hills which is not in accordance with the entire state data, so, it is a matter for further study.

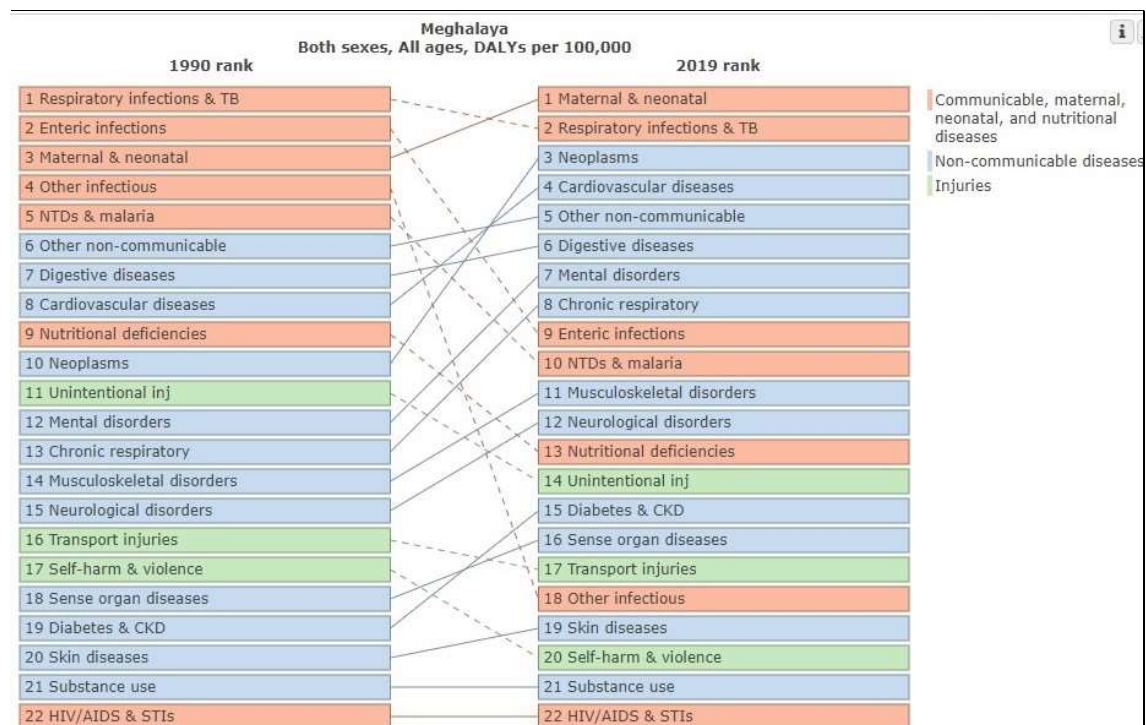
Table 12: Total pregnant women transported per year(2018-Sep 2021)

TOPICS	2018-19	2019-20	2020-21	April-Sep 2021-22
East-Garo /North Garo Hills	152	197	204	61
East-Khasi Hills	2464	1784	1888	777
East/ West-Jaintia Hills	510	372	430	141
Ri-Bhoi District	726	497	547	206
South-Garo Hills	41	27	39	8
South West/ West-Garo Hills	1087	766	675	256
South West/ West-Khasi Hills	531	446	586	250

Source: GVK EMRI state HQ

It is pertinent to mention that while analyzing the trends of the type of emergencies handled by 108 Ambulances, Non-Communicable Diseases were less in number in comparison to acute conditions.

However, there is change in the trend of disease patterns in the state (between year 1990- 2019) where non communicable diseases including cardiovascular diseases are emerging up (**Reference: <https://vizhub.healthdata.org/gbd-compare/india>**). Taking into account the new emerging trend of diseases, 108 ambulance services also need to give more focus on non-communicable diseases in future.



Source: <https://vizhub.healthdata.org/gbd-compare/india>

Table 13: Case wise breakup

Emergency type	2018-19	2019-20	2020-21	2021-22 (Till Sept)	Percentage of cases
Pregnancy	5511	4089	4369	1752	42%
RTA	1684	1022	874	408	11%
Acute Abdomen	1834	1248	1172	468	12%
Cardiac	410	225	262	99	3%
Trauma(non- vehicular)	876	610	495	245	6%
Paediatric	437	256	224	126	3%
Assault	191	107	141	60	1%
Diabetes	114	60	83	47	1%
Fever/Infections	1426	1246	722	645	11%
Neo-natal	285	175	152	126	2%

Emergency type	2018-19	2019-20	2020-21	2021-22 (Till Sept)	Percentage of cases
Respiratory	853	652	477	619	7%
Stroke	326	263	236	89	2%
Total	13947	9953	9207	4684	100%

Source: GVK EMRI state HQ

It was found during patient interview that 108 ambulances transport the patient to the nearest government facility and sometimes to the private facilities on request of the beneficiary. Out of the total transportation made around 15-20% are transported to private hospital. Also there is significant IFT (inter facility transfer) from private hospitals especially seen for Jaintia Hills where 108 ambulances transport patients to Shillong. Moreover, one trip (to and fro) from Jaintia Hills to Shillong takes almost 5 to 6 hours, thereby keeping the ambulance busy resulting in non-availability of ambulance for other patient service. Most of the times ambulances function as transport vehicle only with minimal intervention done to the patient during transportation.

The state has around 170 numbers of ambulances which are under roll of Department of Health & Family Welfare, Govt. of Meghalaya. These ambulances need to be used for Inter Facility Transfers (IFT) which in turn will help 108 services for dealing more and more emergency cases.

Challenges faced by EMTs of 108 Ambulance Services:

The EMTs work seven (07) days at a length and prefer seven (07) days off and by doing this they are working 24 x 7 on their on-duty days, which is actually not recommended. On visit to the quarters of EMTs and Pilots, it was observed that the condition of the quarters are livable but uncertainty prevails as the quarters were provided by local health facility and it was observed sometimes, that they were asked to vacate their quarters by the Medical Officer. Further, the EMTs informed that few times it has been observed that due to the multiple calls received at the Call Centre, multiple vehicles are assigned for the same case and call drops are also witnessed. In few cases the EMTs informed that personal security also is a matter of concern while shifting patients from far flung areas.

Financial component:

It was revealed during discussion with the State Nodal of NHM, Meghalaya, that from February 2009 to March 2016, the service provider (GVK) of 108 Ambulance services were paid in nomination mode at an average rate of Rs. 1.09 – 1.10 lakh/per ambulance/month on mutual understanding with NHM, Meghalaya.

From April 2016, payment for operating the ambulance service by GVK has been on rate contract basis with provision for annual escalation as per whole scale price index. The rate when the present mode of payment was started in 2016 was at Rs. 1,37,700/- and current rate as on 2021 is around Rs 1,66,617/- per ambulance per month. Few Penalties were described in the MoU which are as follow:

Table 14:

SL	Description of Penalty	Amount of Penalty to be imposed
1.	Permissible Response Time: Urban- 30 min Rural= 60 min	1.66% yearly of the OPEX value
2.	More than 10% Ambulance remains non operative for a continuous period of 7 days	1.66% yearly of the OPEX value
3.	Ambulance uptime should be 90%	1.66% yearly of the OPEX value

It was observed there is no provision for penalty clause for number of trip or distance covered/per day in the current MoU. But taking into consideration of the difficult terrain and density of public health facilities in the state, it may not be feasible to include number of trips as penalty clause, however, the State along with the Service Provider may explore other avenues to improve frequency of trips/ distance covered and satisfaction of the beneficiaries.

Total fund received per Year:

Table 15:

Year	Actual Operational cost (Full OPEX) needed for all ambulances (amount in Rs.)	Fund received for the Year for all Ambulances (BLS/ILS/ALS) (amount in Rs.)
2018-19	84991104	84991104
2019-20	88039872	87379573 **
2020-21	88039872	88039872
2021-22 (April to September) *	49451926	49451926

- ** Penalty deduction for strike by field employees in Oct/Nov 2019
- *Includes 2 NH ambulances OPEX from 19th May 2021

Overall Cost breakup as per different heads: (Considering around Rs 77 lakh/month operational cost received from NHM/month)

Table 16:

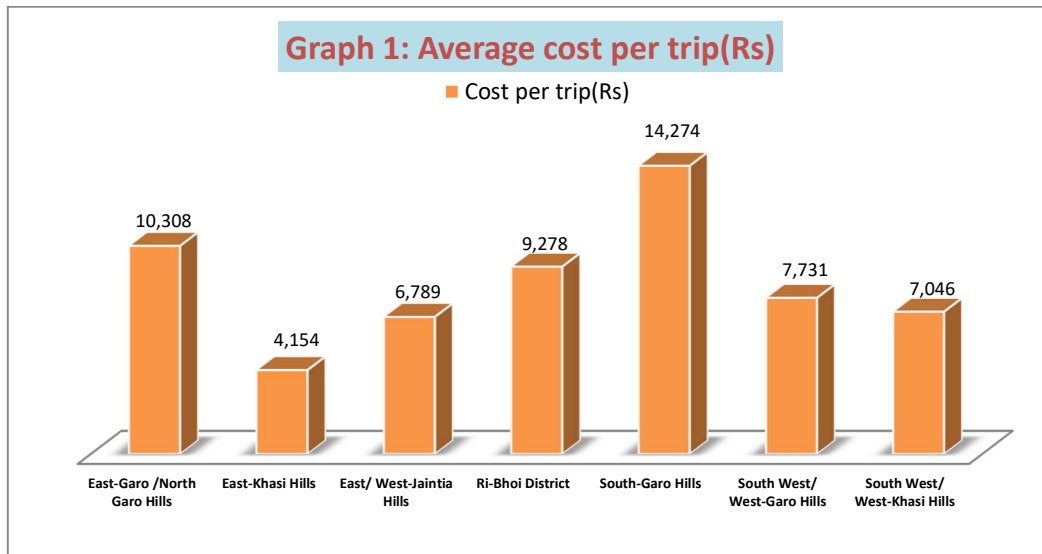
SL	Operational Heads	Average expenses
1.	Human resource	44 lakhs (including ESI and gratuity)/month
2.	POL cost	10 lakh/month
3.	Vehicle maintenance	5 lakh/month
4.	Medicine and consumable	2.5 lakh/month
5.	Office maintenance(including housekeeping and security)	3.5 lakh/month
6.	Electricity (including HQ and Base stations)	3 lakh/month
7.	Generator	1.5 lakh/month
8.	Ambulance insurance	Approx. Rs 20,000/per ambulance/per year
9.	108 lease line for call center	3.5 lakh/year
10.	Training expenses	Half yearly/dynamic cost

Source: GVK state HQ, Shillong

Average cost per trip:

As per the data received from GVK State HQ, Shillong it is seen that average cost per trip is not similar throughout the state where a significant amount of variation is present. The range goes from Rs 4,154 to Rs 14,274 per trip for the FY 2020-21 and the same was observed in other FYs data too.

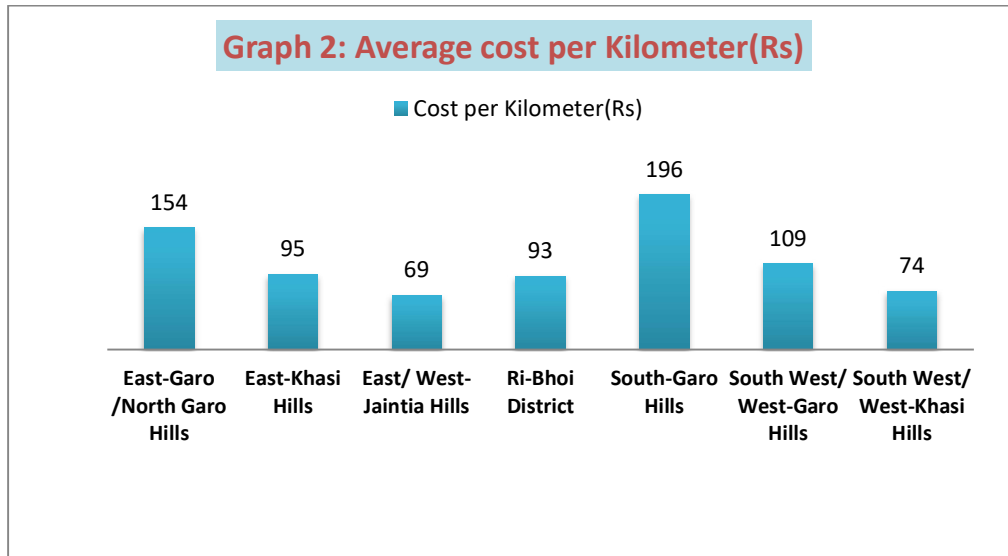
It is pertinent to mention herein that the variation may be due to distance covered during the trip.



Average Cost per Kilometer:

While evaluating the average cost per kilometer it was observed that the variation in cost per kilometer is also quite significant and ranges from Rs. 69.00 to Rs. 196.00.

There may be many causes of this variation in cost but most pertinent might be less trips by the vehicles in particular district.



Recommendations:

1. Of the surveyed ambulances, many were not functioning at par with the Basic Life Support Ambulances norms of the Automotive Industry Standard – 125, Ministry of Road Transport and Highways, Govt. of India, rather they were merely playing role of Patient Transport Vehicle. **All the ambulances in the state categorized as BLS ambulance needs to be equipped as per the laid guidelines.**
2. The technical knowledge of the EMTs evaluated was found to be inadequate and needs to be worked upon with more of practical component and more hours of internship. **The induction trainings should be in line with the course ‘Short term training curriculum handbook EMT- Basic’ recommended by Ministry of Skill Development and Entrepreneurship, GoI.** The mentioned course is of the duration of 1000 hours (173 hours theory, 211 hours practical and 660 hours internship). Also Medical Colleges (eg: NEIGRIHMS) may be involved during practical classes for better knowledge, handholding and quality control. The EMTs needs to be re-oriented on use of oxygen therapy with monitoring overflow meter, pulse-oximeter, wrist watch, wall clock, splints and stretchers.
3. **The minimum educational qualification for an EMT should be a graduate** preferably including subjects of English and Life Sciences.
4. Officials from HR department of State Health Directorate or NHM should be a part of interview procedure for recruiting EMTs by GVK EMRI as per the MoU.
5. The GVK EMRI is required to address the following issues which may contribute towards improved retention of staff:
 - a. The salary of the EMTs and pilots are to be at par with the industry standards with provision for regular annual increments and performance based incentivisation.
 - b. There should be a clear pathway to enable professional growth and career progression for the EMTs including time bound promotion and absorption in higher technical cadre based on capabilities.
6. It was informed by the GVK staff of Meghalaya that 444 Medical equipment and another 115 Non-medical items are beyond Economic repair (BER).The old, worn out and damaged equipment should be replaced with new ones and instruments which are

used for assessment of vitals must be ensured inside the vehicle with regular monitoring by the district/state officials.

7. The basic knowledge of emergency drugs should be taught to the EMTs to prevent en-route loss of life.
8. Indenting of the drugs for 108 ambulances should be demand based indenting with ready availability of essential drugs in the vehicle.
9. State may consider introducing penalty clause for number of trip or distance covered/per day in the next MoU for better performance monitoring or may explore other avenues to improve frequency of trips/ distance covered and satisfaction of the beneficiaries.
10. Out of the total patient transportation made around 15-20% are transported to private hospital. Also there is significant IFT (inter facility transfer) from private hospitals especially in Jaintia Hills. The state needs to utilise around 170 numbers of ambulances which are already under roll of Department of Health & Family Welfare, Govt of Meghalaya for Inter Facility Transfers (IFT) which in turn will help 108 services for dealing more and more emergency cases.
11. Utilization of services in districts like South Garo Hills, East Garo Hills, North Garo Hills and Ri- Bhoi district is found to be below expectation. It was observed that issues of fewer uptakes of services are linked to poor road connectivity, apprehension in the community about the lack of availability of adequate services and poor health seeking behavior in the community. Effort should be made to increase the visibility and acceptance of 108 services in those areas through intensive IEC and BCC activities.
12. The district level monitoring dashboard or application should be shared with the office of Joint Director of Health Services and District Program Management Unit to maintain a synergy in the implementation of services.
13. The present 24 hours working for 7 days by an EMT and a Pilot should be re-planned to prevent the mental and physical fatigue. The present practice can hamper the decision-making capacity of the staff in field.
14. State should revisit the payment norms with differential budgeting to service provider as per the type of ambulance services (BLS /ALS/Patient Transport vehicle).
15. Stringent monitoring of the clause (s) under MoU along with infrastructure within the ambulance, key performance indicators, training status of EMTs, etc. needs to be done

quarterly at State and District level from the State Govt. for better output and efficacy of the service.

16. The 108 Ambulance services need to incorporate the use of colour coded bins in vehicles following the Bio-Medical Waste Management guidelines.
17. A robust revised Memorandum of Understanding based on Industry Standards and state specific needs should be developed for best 108 Ambulance Services.
18. For longevity of the vehicles, provisions for proper garage/shed should be planned.
19. The MoA may be reviewed keeping all the required clauses /provisions in the document for optimal service provision, as expected by the community, from the past experiences, observation and recommendation of the study, etc.

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7. *Health Management Information System (HMIS) portal/June/2021*
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Questionnaire for Knowledge assessment of Emergency Medical Technicians(EMT) of 108 Ambulance

Name of EMT:

Contact Number:

Months of service in 108 ambulance service in Meghalaya (.....months)

EMT training received:

- i. Name of course:
- ii. Type of course (part time / full time / correspondence) with duration:
- iii. Institute / University of affiliation:

Has refresher training / re-training been provided by GVK – EMRI after joining 108 Ambulance Services: Yes/No?

If Yes, type and duration of refresher training / re-training (mention in sequence below):

- i. Course details (including timeline):
- ii. Course details (including timeline):
- iii. Course details (including timeline):

Part A: Multiple choice questions to assess the knowledge level of the EMT

1. What does the Alphabet “A” in SAMPLE stands for?
 - i. Airway
 - ii. Arrhythmia
 - iii. Allergies
 - iv. Asystole

2. What is the most common reason for Shock?
 - i. Tachycardia
 - ii. Haemorrhage
 - iii. Hypotension
 - iv. Excessive Sweating

3. What is the foremost thing that an EMT should do while treating a patient suffering from cardiac arrest?
 - i. Begin CPR immediately
 - ii. Administer early defibrillation in field
 - iii. Administer oxygen at 15 litres / minute via non-rebreather mask
 - iv. Thump the chest to stimulate the heart

4. The acronym START is used to assist in triage situations and stands for?
 - i. Simple Triage and Rapid Treatment
 - ii. Simple Treatment and Rapid Transport
 - iii. Standard Treatment and Rapid Transport
 - iv. Simple Triage and Rapid Transport

5. The emotional stages that patients or their families go through when confronted with death or dying include all the following EXCEPT?
 - i. Denial
 - ii. Bargaining
 - iii. Acceptance
 - iv. Gratitude

 6. Foods that should be avoided or limited to help control stress include?
 - i. Fruits and vegetables
 - ii. Alcohol and tobacco
 - iii. Salads and breads
 - iv. All the above

 7. A patient who is supine is lying.
 - i. Face up
 - ii. Face down
 - iii. On his / her left side
 - iv. On his / her right side

 8. What is the normal respiration rate of an Adult?
 - i. 10 to 15 breaths per minute
 - ii. 12 to 20 breaths per minute
 - iii. 08 to 12 breaths per minute
 - iv. 20 to 25 breaths per minute

 9. The tube that carries food to the stomach is called.
 - i. Intestine
 - ii. Oesophagus
 - iii. Trachea
 - iv. Xiphoid process

 10. Which of the following is not part of the upper airway?
 - i. Larynx
 - ii. Nasopharynx
 - iii. Trachea
 - iv. Pharynx

 11. An 'Occlusive Dressing' is typically associated with?
 - i. An eye injury
 - ii. A chest wound
 - iii. A pregnancy complication
 - iv. An amputation

 12. A patient shows signs of the using of accessory respiratory muscles and nasal flaring. You suspect?
 - i. Appendicitis
 - ii. Cardiac arrest
 - iii. Seizure
 - iv. Respiratory distress

 13. What does 'Hypoxemia' mean?
 - i. Low iron in blood
 - ii. Low iron in body tissue
-

- iii. Low oxygen in blood
 - iv. Low oxygen in body tissue
14. Using the rule-of-nines to determine the burn percentage, what percent is an adult's back?
- i. 4.5 percent
 - ii. 9 percent
 - iii. 18 percent
 - iv. 36 percent
15. The first step to control bleeding is?
- i. Apply direct pressure to wound
 - ii. Elevation of bleeding part
 - iii. Apply tourniquet
 - iv. Bring down the temperature of the patient
16. What events end the second stage of labour?
- i. Active labour
 - ii. Crowning
 - iii. Delivery of baby
 - iv. Delivery of placenta
17. A bee sting can lead to.
- i. Anaphylactic Shock
 - ii. Cardiogenic Shock
 - iii. Hypovolemic Shock
 - iv. Neurogenic Shock
18. What is the 'Compressions to Breaths' ratio when two rescuers are performing a CPR on an adult?
- i. 5 : 1
 - ii. 10 : 1
 - iii. 15 : 1
 - iv. 30 : 2
19. Dehydration can lead to.
- i. Anaphylactic Shock
 - ii. Cardiogenic Shock
 - iii. Hypovolemic Shock
 - iv. Neurogenic Shock
20. Where would you find the peritoneum?
- i. Abdomen
 - ii. Groin
 - iii. Heart
 - iv. Skull
21. What is "Eclampsia"?
- i. Hypertension during pregnancy
 - ii. Infantile cerebral haemorrhaging
 - iii. Infection during pregnancy
 - iv. Vaginal bleeding during pregnancy

22. Normal "Systolic" blood pressure
- Less than 120 mm of Hg
 - Less than 139 mm of Hg
 - Less than 159 mm of Hg
 - Less than 110 mm of Hg
23. The anatomical structure that prevents food from entering the trachea is.
- Epiglottis
 - Oesophagus
 - Pharynx
 - Tongue
24. What is the best option to open the airway of a patient with a suspected spinal injury?
- Head-tilt-chin-lift manoeuvre
 - Jaw-thrust manoeuvre
 - Chin-left-jaw-thrust manoeuvre
 - Chin-lift-tongue-pull manoeuvre
25. The "Golden Hour" in Emergency Medical Services is the period of time immediately after a traumatic injury during which there is the highest likelihood that prompt medical and surgical treatment will prevent death. Which of the following does it refer to?
- The time from injury to arrival at the hospital
 - The time from dispatch of ambulance to delivery of definitive care
 - The time from injury to delivery of definitive care
 - The time from dispatch to arrival on scene of call by the ambulance
26. What are the two techniques for lifting?
- The power lift and the power grip
 - Keeping your feet close together and holding the weight as far away from your body as possible
 - The Atkins lift and the fire-fighters push
 - The jack technique and the heavy grab
27. What is the first step that should be taken while you start to size up a scene?
- Do a Body Substance Isolation (BSI)?
 - Find out how many patients you need to treat
 - Determine the safety of the scene
 - Determine the mechanism of injury
28. Which of the following is NOT considered as part of the patient's signs and symptoms?
- Behavioural issues
 - Obstetrical conditions
 - Environmental emergencies
 - The patient's last oral intake
29. Name the three types of muscles in the human body?
- Abdominal, skeletal, and circulatory
 - Smooth, digestive, and voluntary
 - Involuntary, voluntary, and cardiac
 - Striated, smooth and cardiogenic

30. Cool, pale, and moist skin will indicate.
- i. Normal circulation
 - ii. Inadequate perfusion
 - iii. Hypertension
 - iv. Febrile seizures are imminent

****Scoring for questions from number 1 to number 30**

Correct answer: 1 mark

Incorrect answer: 0 marks

No negative marking. At least 50% of total score (15 out of 30 required for qualifying this section)

PART B: Questionnaire of Skill Set for Patient Assessment/Management by the Dial 108 EMT(Would consist demonstration of skills of assessed EMT using mannequin / fellow EMT as volunteer)

PART 1			
General Assessment / Management of Patient			
Topics		Maximum Score	Score Awarded
Takes appropriate standard precautions		1	
SIZING UP THE SCENE			
Determines the scene/situation is safe (environment, hazards, violence, etc.) for interventions		1	
Determines mechanism of injury (Moi)/Nature of Illness (Nol)		1	
Determines the number of patients		1	
Requests additional help if necessary		1	
Considers stabilization of spine		1	
PRIMARYASSESSMENT/RESUSCITATION			
Determines general impression of the patient		1	
Determines responsiveness/level of consciousness (AVPU)			
Determines whether patient is awake (awake & confused, awake & disoriented, awake & lethargic, or awake & oriented)		1	
Determines the response to verbal communication		1	
Determines the response to pain stimuli (pinch, squeeze, or sternum rub)		1	
Determines unresponsiveness		1	
Determines chief complaint / apparent life threats		1	
Airway	Assesses for problems	1	
	Assures patent airway	1	
Breathing	Assesses breathing rate, rhythm, quality & depth	1	
	Assures adequate ventilation	1	
	Initiates appropriate oxygen therapy	1	
Circulation	Assesses pulse rate, rhythm, quality	1	
	Assesses/controls major bleeding	1	
	Assesses skin (colour, temp, moisture, capillary refill test)	1	
Vital Signs	Pulse	1	
	Respirations	1	
	Blood Pressure	1	
	SpO2	1	

Identifies patient priority and makes treatment/transport decision	1	
HISTORY TAKING		
SIGNS & SYMPTOMS		
Determines the condition / event	1	
Time since onset of condition / event	1	
Severity of condition / event	1	
Exposure to Poisons / Toxins / Radiation / Flames	1	
Gathers additional information relative to signs and symptoms	2	
ASSESS PAST MEDICAL HISTORY		
Allergies	1	
Past pertinent illness	1	
Events leading to present condition / event	1	
Medications presently on	1	
Last oral intake	1	
Illnesses	1	
SECONDARY ASSESSMENT		
Assesses affected body part/system		
Cardiovascular, Neurological, Reproductive, Pulmonary, Musculoskeletal, Gastrointestinal, Skin & Psychological/Social	1	
INTERVENTIONS		
Obtains Medical Directions from Medical Officer in Charge of EMS via Dial 108 Call Center	1	
Carries out activities as per medical directions including interventions / treatments	1	
Initiates additional interventions/treatment as per field situation of patient	1	
REASSESSMENT		
Demonstrates reassessment of the patient appropriate to patient condition	1	
Assess accuracy of verbal report as to be reported at receiving healthcare facility	1	
TOTAL of Part 1 (Passing Score is at least 80 % of Maximum Score, i.e. 34)	43	

PART 2			
Assessment of Management of Bleeding, Trauma, Cardiac Emergency, and Obstetric & Neo-natal Emergency			
Topics		Maximum Score	Score Awarded
A. Bleeding			
Applies direct pressure to the wound (using sterilized pressure pads)		1	
Applies tourniquet		1	
Applies dressing/bandage to wound		1	
Properly positions the patient		1	
Initiates steps to prevent heat loss from the patient		1	
Indicates need for immediate transportation		1	
B. Trauma			
Obtains SAMPLE history taking		1	
Assesses the head	Inspects and palpates the scalp and ears	1	
	Assesses the eyes	1	
	Assesses the facial area including oral & nasal area	1	
Assesses the	Inspects and palpates the cervical spine	1	

neck	Assesses for Jugular Vein Distension	1	
	Assesses for tracheal deviation	1	
Assesses the chest	Inspect the chest	1	
	Palpate the chest	1	
	Auscultate the chest	1	
Assesses the abdomen/pelvis	Inspects and palpates the abdomen	1	
	Assesses and palpates the pelvic girdle	1	
	Assessment of genitalia/perineum as needed	1	
Assess the extremities	Inspects extremities for abnormalities	1	
	Inspect, palpate, and assess distal pulses	1	
	Capillary refill	1	
	Sensation & movement	1	
Assesses the posterior	Inspects and palpates thorax/thoracic vertebrae	1	
	Inspects and palpate slower back/lumbar vertebrae	1	
	Inspects and palpates flank areas	1	
C. Cardiac Management			
Assesses respiratory status (observes the patient and determines the absence of breathing or abnormal breathing—gaspings or agonal respirations)		1	
Demonstration of 5 minutes of adult CPR			
Adequate depth and rate of compressions		1	
Correct compression-to ventilation ratio		1	
Allows the chest to recoil completely		1	
Adequate volumes for each breath		1	
Minimize interruptions—nolongerthan10secondsthroughout		1	
D. Obstetric and New-born Management			
Assesses the mother’s condition prior to the delivery of head of the baby; performs the delivery and safely removes the placenta		1	
Clamping of the cord with due procedure and maintains the gap of 10 cm in between two clips		1	
Checks for any tear to the cervix and provides the perineal care		1	
After delivery of the baby, wiping the nose and mouth; performs naso& oro-pharynx; measures the APGAR score at 1 and 5 minutes		1	
Performs detailed examination of the baby to rule out any injury or abnormality		1	
Checks the infants clamped cord and initiates the breast feeding		1	
TOTAL of PART 2 (Passing Score is at least 80 % of Maximum Score, i.e. 30)		38	
GRAND TOTAL (PART 1 + PART 2) - Passing Score is at least 80 % of Maximum Score. i.e. 64		81	

PART C: EMPLOYEE SATISFACTION LEVEL QUESTIONNAIRE FOR EMT's

1. How would you describe your work environment in terms of?
 - a. Adequacy and quality of workspace
 - b. Behaviour / attitude of peers and superiors
 - c. Work pressure and support from colleague
 - d. Support from management for professional improvement and redressal of grievances

- e. Regularity of salary with clarity of increments / incentives based on defined performance indicators
- f. Overall perception on job satisfactions and prospects of promotions as per category of staffing

Name of Assessed:

Name of Assessor:

Date and Place of Assessment:

Annexure – B

**Checklist for 108 Ambulance Services Administrative Unit & Call Centre
To be Utilized at State and Districts Level**

PART A (Checklist for State Administrative Unit of 108)

Name of the State:

Name of District:

Date of Assessment:

Questionnaire for State Administrative Unit of 108:

1. Name of the Head of the Unit and Designation:
2. Contact Number:
3. When was the last MoU signed with state government?
4. Total Human Resources in the Administrative Unit and their designation:

Serial Number	Designation of the HR	Number of persons	Current salary/month
	<i>Add rows if required</i>		

5. Percentage Attrition Rate of Staff (number of employee departures / average number of employees X 100):
 - i. FY 2016-17:
 - ii. FY 2017-18:

- iii. FY 2018-19:
 - iv. FY 2019-20:
 - v. FY 2020-21:
6. Total Number of Ambulance Sanctioned as per MoU with State:
 7. Total number of Functional 108 ambulances (as on 30th September 2021):
 - i. BLS:
 - ii. ILS:
 - iii. Others:
 8. Total number of Functional 108 ambulances available with GPS:
 - i. BLS:
 - ii. ILS:
 - iii. Others:
 9. Human Resources and 108 Ambulances District-Wise (as on 30th September 2021):

Type	Districts of Meghalaya										
	EGH	WGH	SGH	NGH	SWG	Ribhoi	EKH	SWKH	WKH	EJH	WJH
EMTs											
Drivers											
BLS											
ILS											
ALS											

10. Monthly operational cost of per Ambulance: (separate for BLS/ILS/Others)
 - i. BLS:
 - ii. ILS:
 - iii. Others:

11. Total fund received in financial year:

Year	Actual Operational Cost (Full OPEX)	Total Funds Received	Funds Approved as per RoP
2016-17			
2017-18			
2018-19			
2019-20			
2020-21			
2021-22 (April to September)			

Call Center Questionnaire:

1. Timing of the call center functioning:
2. Number of call stations available in the call center:
3. Assessment of the process in call center:

- a. **Flowchart**– from receiving an emergency call to transfer of the call to 108 Ambulance
(Flowchart to be asked for)
- b. **Response time**- from taking over the call from call center by 108 Ambulance to receiving the patient.
- c. **Patient Care Report (PCR)**– from taking over the call from Call Centre by EMT to putting the Case into Closure/drop into hospital
(PCR detailing and system copy to be asked for)
- d. **Call Record Copy of 1 case for cross checking and documentation (may be old case)**
- e. **List of equipment available in the Call Centre (including laptop/desktop, headsets, number of workstations etc.)**

PART B (Checklist for Administrative Unit of 108 and District Level Assessment)

Key Performance indicators for Quality of service delivery at 108 ambulance service:

PART 1						
Key Performance Indicators of 108 Call Center						
TOPICS	APRIL TO SEPTEMBER 2021	FY 2016- 17	FY 2017- 18	FY 2018- 19	FY 2019- 20	FY 2020- 21
Total number of calls received						
Total number of calls attended						
Total number of irrelevant calls						
Total number of calls dropped						
Total number of calls missed						
Total number of calls valid but incomplete						
Total number of dropped / missed / valid but incomplete calls returned						
Total number of calls where ambulances were dispatched						
Total number of calls abandoned (vehicles not dispatched)						
Average Call Response Time						
Maximum Call Response Time						
Minimum Call Response Time						
Percentage of Return Calls to Total Number of Dropped Calls, Missed Calls, Valid but Incomplete Calls and Abandoned Calls						

PART 2						
Key Performance Indicators of 108 Ambulances						
TOPICS	April to September 2021	FY 2016-17	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21
Average number of trips and average kilometres travelled per day (trips / kms)						
Ambulance 1						
Ambulance 2						
Ambulance 3						
Ambulance 4						
Ambulance 5 (add rows for ambulances as required)						
Average number of cases attended / transported per day						
Ambulance 1						
Ambulance 2						
Ambulance 3						
Ambulance 4						
Ambulance 5 (add rows for ambulances as required)						
Average response time (urban)						
Average time required from call made to 108 to ambulance reaching scene						
Ambulance 1						
Ambulance 2						
Ambulance 3						
Ambulance 4						
Ambulance 5 (add rows for ambulances as required)						
Average time required from scene to reaching health facility						
Ambulance 1						
Ambulance 2						
Ambulance 3						
Ambulance 4						
Ambulance 5 (add rows for ambulances as required)						
Average response time (rural)						
Average time required from call made to 108 to ambulance reaching scene						
Ambulance 1						
Ambulance 2						
Ambulance 3						
Ambulance 4						
Ambulance 5 (add rows for ambulances as required)						
Average time required from scene to reaching health facility						
Ambulance 1						
Ambulance 2						

Ambulance 3						
Ambulance 4						
Ambulance 5 (add rows for ambulances as required)						
Total number of trips from scene to health facility (public) for period						
Ambulance 1						
Ambulance 2						
Ambulance 3						
Ambulance 4						
Ambulance 5 (add rows for ambulances as required)						
Total number of trips from scene to health facility (private) for period						
Ambulance 1						
Ambulance 2						
Ambulance 3						
Ambulance 4						
Ambulance 5 (add rows for ambulances as required)						
Total number of trips from health facility to health facility						
Ambulance 1						
Ambulance 2						
Ambulance 3						
Ambulance 4						
Ambulance 5 (add rows for ambulances as required)						
Total breakdown time per ambulance for period (in hours)						
Ambulance 1						
Ambulance 2						
Ambulance 3						
Ambulance 4						
Ambulance 5						

PART 3						
Disease wise distribution of beneficiaries handled (total in period):						
Diseases / Ailments	April to September 2021	FY 2016-17	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21
Cardiovascular Diseases						
CNS Diseases						
Acute Infectious Conditions (Bacterial / Parasitic / Viral)						
Respiratory Diseases (including TB)						
Malignancy / Neoplasms						
Maternal Conditions						
Neonatal Conditions						
Childhood Disorders						

Unintentional Injuries (excluding road traffic accidents)						
Road Traffic Accidents						
Ill Defined / Undefined Conditions Requiring Hospital Transfer						
COVID 19 Transfers						

Annexure – C

Checklist for NHM, Meghalaya on 108 Ambulance Services

Memorandum of Understanding (MoU) based queries:

- 1) 108 Ambulances provide 24x7 services? Yes/No
- 2) BLS Ambulances provide the services. Yes/No
If yes, how many BLS Ambulances are currently in service.
- 3) ALS Ambulances provide the services. Yes/No
If yes, how many ALS Ambulances are currently in service.
- 4) ILS Ambulances provide the services. Yes/No
If yes, how many ILS Ambulances are currently in service.
- 5) 24x7 Call Centre is functional for 108 Ambulance Services. Yes/No
If no, mention the working hours.
- 6) How many Emergencies have been handled for?

Conditions	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
Medical						
Police						
Fire						

7) Trainings for Human Resources:

Human Resources	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
EMTs						
Medics						
Para-Medical						
Assisting Staff						

8) Numbers of patients shifted to Government Facilities (and aided/Army)/Private Facilities after being secured by EMTs:

2016-17		2017-18		2018-19		2019-20		2020-21		2021-22	
Govt.	Private	Govt.	Private	Govt.	Private	Govt.	Private	Govt.	Private	Govt.	Private

9) Mention the Criteria for shifting patients in Government Facilities?

- i)
- ii)
- iii)
- iv)

- v)
- 10) Mention the Criteria for shifting patients in Private Facilities?
 - i)
 - ii)
 - iii)
 - iv)
 - v)

(Please attach documents in support of the criteria, if any)

- 11) Monitoring and Supervision:
 - i) Who is responsible for monitoring and supervising the 108 Ambulance Services?
Name:
 - Designation:
 - Work details:
 - Frequency of on-site supervision:

- 12) As per the MoU, how many monthly meetings have been conducted since April 2016?
Numbers: (monthly and annually from FY 2016-17 onwards)

- 13) Who are the members of the Executive Committee formed for 108? (If any)

--

(Please, provide the Official Order)

- 14) Finance:
 - i) Funds marked as per the MoU and annual escalation:

Year	Funds with escalation	% of escalation
2016-17		
2017-18		
2018-19		
2019-20		
2020-21		
2021-22		

- ii) Actual funds released by the NHM, Meghalaya:

Year	Actual Funds released with escalation	% of escalation
2016-17		
2017-18		
2018-19		

2019-20		
2020-21		
2021-22		

iii) What are the criteria observed for releasing the funds? (Please, attach documents, in support of the narrative)

--

iv) Frequency of releasing the funds:

Financial Year	Ideal frequency as per the criteria	Actual frequency
2016-17		
2017-18		
2018-19		
2019-20		
2020-21		
2021-22		

v) Difficulties in releasing funds, if any:

--

vi) Penalties imposed by the NHM, Meghalaya as per the MoU:

Financial Year	Amount of which penalty imposed	Reasons for imposing penalty
2016-17		
2017-18		
2018-19		
2019-20		
2020-21		
2021-22		

15) Comments on overall functioning of the 108 Ambulance Services:

Enablers	Challenges

16) How does the state want to improve the present 108 Ambulance Services?

Beneficiary/Attendant Questionnaire

Name of the Beneficiary:

Address:

PO:

PS:

District:

State:

Contact No:

Number of family members:

Monthly family income:

Name of Healthcare Facility (Public / Private):

1. Are you registered / insured under Megha Health Insurance Scheme (MHIS) / PMJAY/ Other Health Insurance Schemes?
 - i. Yes
 - ii. No
2. Take a brief note of the circumstances leading to the beneficiary utilizing 108 call center services and the sequel of events till admission at the healthcare facility:

After how many attempts did the 108 Ambulance Call Centre Executive respond?

- i. First attempt
 - ii. 2-4 attempts
 - iii. Did not take up call but called back
 - iv. Did not take up call so had to connect from another number or directly called mobile number of EMT/Driver
3. How do you come to know about 108 Ambulance services?
 - i. From community healthcare staff (ASHA / ANM / MLPH / MO / Other healthcare staff)
 - ii. From Web/TV/Radio/Print Media/Billboards
 - iii. From friends/neighbours/community members
 - iv. Not aware and someone else called the 108 services
 4. After confirmation by 108 services for dispatching ambulance, how long did it take for the ambulance to reach you?
 - i. Within 30 minutes
 - ii. Within 30 to 45 minutes

- iii. Within 45 to 60 minutes
 - iv. Beyond 60 minutes
5. Location where the ambulance picked you up?
- i. From residence / site where call was made
 - ii. From nearest village or local marketplace / square / community area
 - iii. Instructed to reach specified nearby location by ambulance personnel
 - iv. Had to travel by other means to reach ambulance pick-up location
- **If answer is ii, iii or iv then please specify reasons thereof,
-

6. What emergency medical services were dispensed by EMT during your time in the ambulance?
- i. Cardio-Pulmonary Resuscitation / Defibrillation and/or chest pain/cardiac issues stabilization and O2 therapy
 - ii. First aid/stabilization for trauma / bleeding / fractures / acute conditions with / without administration of IV fluids
 - iii. Antenatal / Intranatal / Postnatal
 - iv. Only transportation to healthcare facility (tick whichever is applicable)
 - a. From residence / site of call to healthcare facility
 - b. From healthcare facility to healthcare facility as referral transport
7. How was the Healthcare Facility where you are admitted chosen?
- i. It was the nearest functional public / private healthcare facility
 - ii. Beneficiary / attendant chose the healthcare facility
 - iii. Ambulance / 108 center personnel chose the healthcare facility
 - iv. Others, specify
-

8. Time taken from pick-up till reaching pre-determined Healthcare Facility.
- i. Within 30 minutes
 - ii. Within 30-45 minutes
 - iii. Within 45-60 minutes
 - iv. Beyond 60 minutes
9. To be answered by beneficiary as per healthcare facility (public/private) where admitted:
- A. For beneficiaries admitted in private healthcare facilities:
Why did you choose a private healthcare facility?
- i. Perception of receiving better care and management at a private hospital compared to public healthcare facility
 - ii. Nearest healthcare facility with assured services as per requirement
 - iii. Referred for secondary / tertiary level care and transported by 108 ambulance
 - iv. Did not have a choice as ambulance brought the beneficiary to the private facility
- B. How will you pay for the expenses incurred for treatment?

- i. Have health insurance under MHIS / PMJAY/ Other Health Insurance Schemes
 - ii. Will pay the bills from own pocket
 - iii. Take loan / mortgage property / sell assets
 - iv. Others, specify
- C. For beneficiaries admitted in public healthcare facilities
- D. Why did you choose a public healthcare facility?
- i. Perception of receiving better care and management at a public hospital compared to a private hospital
 - ii. Preferred private hospitals but due to cost implications opted for public healthcare facility (not insured)
 - iii. Did not have a choice as ambulance brought the beneficiary to the public hospital
 - iv. Others, specify
-
- E. Did you have to pay for any of the services (tick as applicable)
- i. For Wards / Beds
 - ii. For drugs, diagnostics, and consumables
 - iii. For food / diet
 - iv. Others, _____

10. Did you pay for 108 Ambulance Services?

- i. Yes
- ii. No
- iii. If yes,
 - a. Paid against receipt and / will be reimbursed through schemes
 - b. Paid against receipt but not reimbursed
 - c. Paid as bribe

11. How was your experience with the 108 Ambulance Services?

- i. Highly satisfied with the services and experience
- ii. Satisfactory experience but improvement in certain areas is required
- iii. Not Satisfactory
- iv. Highly dissatisfied and feels services do not serve the purpose

Kindly elaborate upon your experience while utilizing the 108 ambulance services:

1. Areas which upheld / increased your trust and reliability on the 108 ambulance services
2. Behavioral aspects of the 108-call center & ambulance personnel which may have affected your perception (good or bad) about the 108 ambulance services
3. Perception or experience of discrimination based on culture / region / ethnicity of beneficiary if any
4. Areas where you feel improvements / changes are required for the 108 services to be more accessible and acceptable to the community

Checklist for Equipment in 108 Ambulance(BLS/ILS/ALS)					
SL.	Equipment Name	Unit Type	Is this a mandatory Equipment to be available at the Training Centre (Yes/No)	Tick wherever applicable	
				Available	Unavailable
1	Laptops/ Computers	Eqpt Nos	Yes		
2	Distilled Water	ml	Yes		
3	Face mask	Bundle	Yes		
4	Gloves	Bundle	Yes		
5	Glucometer Strips	Nos	Yes		
6	Steel Instrument Tray (Small)	Nos	Yes		
7	Steel Instrument Tray (Medium)	Nos	Yes		
8	Different Colour Plastic Bags With Dustbins (Yellow)	Nos	Yes		
9	Different Colour Plastic Bags With Dustbins (Red)	Nos	Yes		
10	Different Colour Plastic Bags With Dustbins (Blue)	Nos	Yes		
11	Different Colour Plastic Bags With Dustbins Puncture proof(White)	Nos	Yes		
12	Different Colour Plastic Bags With Dustbins (Black)General waste	Nos	Yes		
13	Spirometer	Nos	Yes		
14	Dead Body Bag	Nos	Yes		
15	Hand Sanitizer	ml	Yes		
16	COVID PPE Kit	Nos	Yes		
17	Electrodes	Bundle	Yes		
18	ECG Machine with leads	Nos	Yes		
19	Oxygen Concentrator with all accessories	Nos	Yes		
20	Flowmeter	Nos	Yes		
21	Humidifier	Nos	Yes		
22	Combi Tube	Nos	Yes		
23	Vaccum Splints	Nos	Yes		
24	Extrication equipment s (Rod, Rope, Hammer, Scissor, Fire Safety Blanket)	Each	Yes		
25	EMS Boots or Iron Toe Shoes	Nos	Yes		
26	Automated External Defibrilator Machine	Nos	Yes		
27	Pocket Mask Adult	Nos	Yes		
28	Torch	Nos	Yes		
29	Spacer	Nos	Yes		

30	Inhaler	Nos	Yes		
31	Bandages	Bundle	Yes		
32	Syringes 5ml,10ml,20ml,50ml	Nos	Yes		
33	Microdrip IV Set	Nos	Yes		
34	IV Set	Nos	Yes		
35	Endotracheal Tube all Size	Each	Yes		
36	ET Stylet	Nos	Yes		
37	Suction Catheter of varied size	Each	Yes		
38	Laryngeal Mask Airway of varied size	Each	Yes		
39	Simple Oxygen Mask Adult	Nos	Yes		
40	Nasal Canula/ Prong Adult	Nos	Yes		
41	Nasopharyngeal Airways of varied size	Each	Yes		
42	Oropharyngeal Airways of varied size	Each	Yes		
43	Cervical Collar Large/ Medium/ Small	Each	Yes		
44	Manual Thermometer	Nos	Yes		
45	Digital Thermometer	Nos	Yes		
46	Malleable Splint	Nos	Yes		
47	Various IV Fluid (NS,RL,DNS)	Each	Yes		
48	IV Cannula of varied size	Nos	Yes		
49	Laryngoscope With Blades Adult	Nos	Yes		
50	Suction Machine with its pipelines	Nos	Yes		
51	Nebulizer Machine	Nos	Yes		
52	Oxygen Cylinder A type with key, tubing and trolley	Nos	Yes		
53	Oxygen Cylinder B type with key, tubing and trolley	Each	Yes		
54	Nebulization Mask Adult	Nos	Yes		
55	Ventury Mask	Nos	Yes		
56	Partial Rebreath Face Mask	Nos	Yes		
57	Non Rebreath Face Mask	Nos	Yes		
58	Helmet	Nos	Yes		
59	Scoops Stretcher	Nos	Yes		
60	Stair Chair	Nos	Yes		
61	Spine Baord With Beds with Immobilizer	Nos	Yes		
62	Glucometer	Nos	Yes		
63	Finger Pulseoxymeter	Nos	Yes		
64	BP Apparatus Automatic	Nos	Yes		

65	BP Apparatus Manual	Nos	Yes		
66	Hospital Bed Automatic	Nos	Yes		
67	Defibrillator	Nos	Yes		
68	Ambu bag with Mask (Adult)	Nos	Yes		
69	Combi Tube	Eqpt Nos	Yes		
70	Vaccum Splints	Eqpt Nos	No		
71	Extrication equipment s (Rod, Rope, Hammer, Scissor, Fire Safety Blanket)	Each	Yes		
72	EMS Boots or Iron Toe Shoes	Eqpt Nos	Yes		
73	ET Stylet	Eqpt Nos	Yes		
74	Suction Machine (Electric)	Eqpt Nos	Yes		
75	Laryngoscope With Blades Adult	Eqpt Nos	Yes		
76	Spine Board With Beds with Immobilizer	Each	Yes		
77	Nasal Canula Adult	Eqpt Nos	Yes		
78	Nebulizer	Eqpt Nos	Yes		
79	Various IV Fluid (NS, RL, DNS)	ml	Yes		
80	Glucometer	Eqpt Nos	Yes		
81	Automated External Defibrillator Trainer	Eqpt Nos	Yes		
82	Microdrip IV Set	Eqpt Nos	Yes		
83	Suction Machine	Eqpt Nos	Yes		
84	Cervical Collar Small	Nos	Yes		
85	Suction Catheter of varied size	Each	Yes		
86	Inhaler	Eqpt Nos	Yes		
87	Pocket Mask Adult	Eqpt Nos	Yes		
88	Laryngoscope With Blades Paediatric	Eqpt Nos	Yes		
89	Simple Face oxygen Mask Adult	Eqpt Nos	Yes		
90	Infant Ambu Bag With Mask	Eqpt Nos	Yes		
91	Cervical Collar Medium	Eqpt Nos	Yes		
92	Cervical Collar Large	Eqpt Nos	Yes		
93	Nasal Canula Pediatric	Eqpt Nos	Yes		
94	Simple Face oxygen Mask Pediatric	Eqpt Nos	Yes		
95	Endotracheal Tube all size	Each	Yes		
96	Adult Ambu Bag With Mask	Each	Yes		
97	Syringes 5ml, 10ml, 20ml, 50ml	Each	Yes		
98	Spacer	Eqpt Nos	Yes		
99	Malleable Splint	Eqpt Nos	Yes		
100	Nebulization Mask Adult	Eqpt Nos	Yes		

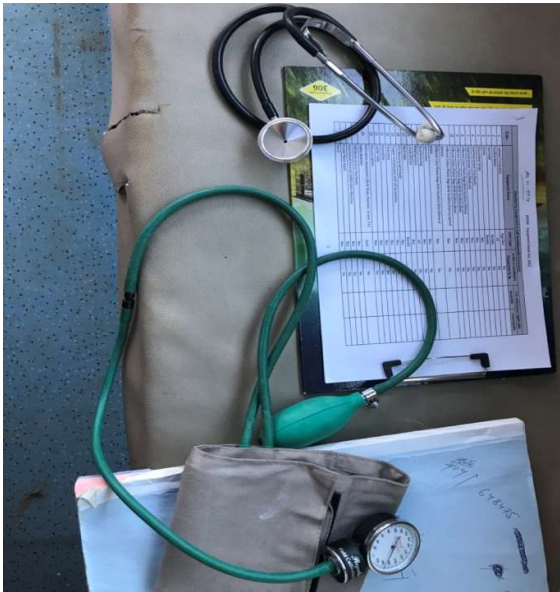
Photo Gallery:



Condition of register and same register maintained for multiple vehicles



Tyre inside the vehicle and rusted stand



Damaged stethoscope and dial type BP machine



Damaged BP machine in field



Damaged stretcher and head block missing in spine board

Incomplete register without vehicle details mentioned

Contributors:

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