

THE EMERGENCY MEDICAL SERVICE IN TIMOR-LESTE

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Abstract: The existence of the National Ambulance and Medical Emergency Service (SNAEM) is part of the evacuation, urgent pre-hospital treatment and stabilisation of serious illnesses, injuries and transport of patients to definitive care. This is a rapid action that health professionals working in the SNAEM must attend to, especially in the emergency service unit. The health professionals who work in the emergency department are doctors, nurses and midwives. There are three different ways of evacuating patients in the emergency medical services provided by SNAEM. Evacuation by Emergency Medical Ambulance, Emergency Medical Ship Ambulance (by sea) and Medevac (Emergency Medical Air Ambulance - by helicopter) to transport patients from various locations to health centres and the Guido Valadares National Hospital (HNGV) in Dili. This paper aims to describe the emergency medical service in East Timor. It highlights the management of emergency service support, the emergency of medical service providers, the emergency of the medical service provision process, the importance of the emergency medical service, the role of the emergency medical service, and the challenges and opportunities encountered by the SNAEM.

Keywords: Emergency Medical Service; Health System; East Timor.

O Serviço de Emergência Médica em Timor-Leste

Resumo: A existência do Serviço Nacional de Ambulâncias e Emergências Médicas (SNAEM) faz parte da evacuação, tratamento pré-hospitalar urgente e estabilização de doenças graves, lesões e transporte de doentes para cuidados definitivos. Esta é uma ação rápida a que devem atender os profissionais de saúde que trabalham no SNAEM, especialmente na unidade de serviço de urgência. Os profissionais de saúde que trabalham no serviço de urgência são médicos, enfermeiros e parteiras. Existem três formas diferentes de evacuação dos doentes nos serviços de emergência médica promovidos pelo SNAEM. A evacuação através de ambulância de Emergência Médica, ambulância de Emergência Médica de Navio (via marítima) e *Medevac* (ambulância de Emergência Médica Aérea – por helicóptero) para transportar pacientes de vários locais para os centros de saúde e o Hospital Nacional Guido Valadares (HNGV), em Díli. O objetivo deste trabalho é descrever o serviço de emergência médica em Timor-Leste. Destaca-se a gestão do apoio ao serviço de emergência, a emergência dos prestadores de serviços médicos, a emergência do processo de prestação de serviços médicos, a importância do serviço de emergência médica, o papel do serviço de emergência médica, os desafios e as oportunidades encontradas pelo SNAEM.

Palavras-chave: Serviço de Emergência Médica; Sistema de Saúde; Timor-Leste.

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Introduction

Timor-Leste is the youngest country in the Southeast Asian region. The country occupies the eastern half of the island of Timor, with a total population of 1,341,926 in 2022 (Timor-Leste Population [TLP], 2022). The country is made up of 13 municipalities, 1 special autonomous region, 65 administrative posts, 442 villages and 2,225 hamlets. The country lies between Australia and Indonesia. The size of the country is 14,874 square kilometres. It has around 30 spoken dialects and 4 distinct spoken languages, such as Portuguese and Tetum, which are

East Timor is 21 years of age in 2023. The country has poor roads, limited clean water, limited qualified infrastructures for government institutions at the municipality level and also administrative posts area. Minimum education infrastructure to guarantee a qualified education system in rural areas, lack of agriculture facilities to improve and modernise agriculture system to produce rice, corn and other local products, limited local tourism places and hotels to accommodate tourists as well as health system coverage in the country. In this work, the main focus will only be on describing the emergency medical service process in East Timor.



Figure 1 Map of Timor-Leste (Source Wikipedia)

The epicentre of East Timor's health system is the national hospital in the capital, called Guido Valadares National Hospital, a regional hospital and four referral hospitals. A regional hospital is located in the municipality of Baucau, which covers the municipalities of Viqueque and Lautém. One referral hospital is located in the administrative post of Maubisse, which covers the municipalities of Ainaro and Manufahi, and three referral hospitals are located in three different border areas with Indonesia. These are the Oecússi referral hospital, which covers the autonomous administration of Oecússi. The Maliana referral hospital, located in the municipality of Bobonaro, covers the municipality in question. The Suai referral hospital covers the municipality of Covalima. There are 70 community health centres and 442 health posts (Timor-Leste National Health Sector Strategic Plan [NHSSP], 2020). Every health centre in the country has its emergency service unit.

The Government of Timor-Leste, through the Ministry of Health, approved Decree-Law No. 25/2020, of 10 June, which establishes the various competencies of the National Ambulance and Medical Emergency Service (SNAEM), such as:

- Promoting the integrated emergency system;
- Promoting the emergency communication system;
- Promoting emergency medical services;
- Establishing clinical guidelines for emergency services;
- Establishing the criteria for the provision of emergency care services before referral to definitive care (SNAEM Decree-Law, 2020).

Based on these five competencies, the scope of the emergency medical service will be defined.

The Emergency Medical Service Delivery

Management of Emergency Service Support

The emergency medical service in Timor-Leste was started in 2021 up to now. The fair support service from SNAEM to all population and health facilities around the country, SNAEM has established 2 different stations, day and night teams, and a stand-by team at the SNAEM office to reply

to any emergency cases in the country. The stations are in Becora and Comoro. These two emergency stations are under the Dili municipality emergency service. Becora station is ready to provide emergency medical service to the population in the administrative posts of Cristo Rei, Hera and Metinaro. Certain medical cases can be evacuated also by using the SNAEM ambulance wagons for those patients in the Manatuto and Aileu municipalities. Comoro station is prepared to attend to patients in the area of administrative post-Dom Aleixo, Tibar and Nasuta. Meanwhile, those patients who are hospitalized in referral hospitals and community health centres with beds in those municipalities such as Atauro, Baucau, Bobonaro, Covalima, Lautem, Manufahi, Viqueque and special autonomous region of Oe-cusse (acronym in Portuguese, RAEOA) are evacuated by using medevac to National Hospital Guido Valadares.

Some cases can be evacuated using the SNAEM ambulance for certain cases in the municipalities of Aileu, Ermera, Liquiça and Manatuto. Each station has an ambulance that is equipped with medical service instruments, such as a blood pressure monitor, temperature monitor, oxygen, infusion and others. There is a driver who is ready to help the medical service providers at the different stations, day and night teams, as well as maintain the vehicle's functionality. Meanwhile, SNAEM has also set up an emergency medical service in each municipality, including RAEOA.

Emergency Medical Service Providers

Emergency medical service providers are based in the various posts set up by SNAEM. Emergency medical service providers are made up of doctors, nurses and midwives. These medical service providers work as a team during the treatment of emergency cases in the community and in healthcare establishments that require the assistance of medical service providers to attend to patients and pre-hospital deliveries before transporting them to definitive care. The emergency medical service classified as a voluntary medical service is offered by national governmental organisations (NGO); governmental emergency medical services are covered by governmental

agencies such as SNAEM as well as the private ambulance service, which is run by private companies (Emergency Medical Services Agenda, 2021). Regarding the types of emergency services, in East Timor, the government created the SNAEM to respond to the provision of emergency medical services.

These medical cases were attended to and transferred by SNAEM in the community, and cases at the municipal level were also requested by municipal doctors/officials to SNAEM and the emergency medical service to attend to, evacuate and transfer the patients to definitive care.

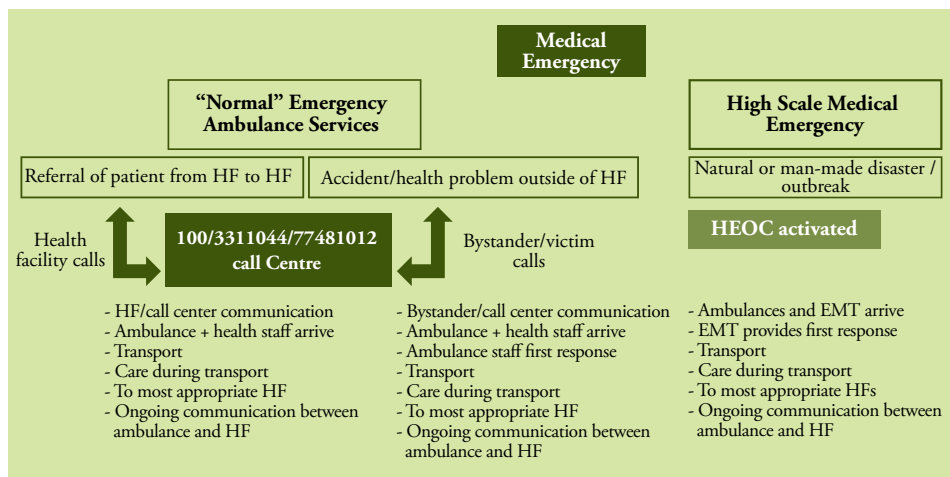


Figure 2 The work procedure of SNAEM (Source SNAEM SOP).

The Process of Providing Emergency Medical Services

Clinical cases were attended to and transferred by the SNAEM in the community and cases at the municipal level were also requested by municipal doctors/officials to the SNAEM and the emergency medical service to attend to, evacuate and transfer patients to definitive care.

Several cases were attended to by medical service providers, as shown in Table 1. Clinical cases in the community and in health units that require emergency medical assistance should be requested through the emergency call centre contacts: (+670) 110, 3311022, 77481012.

The procedure for obtaining emergency medical service from SANEM is as follows:

1. Any clinical case in the community must be called directly to the call centre and provide clear information to the call centre staff about the type of clinical illnesses and the location.
2. The call centre notifies emergency medical staff based on clinical cases and location, for example.
3. The medical emergency agents go as quickly as possible to the destination to evacuate the patients with an ambulance. If the clinical cases are at a municipal level, the medical emergency officer evacuates the patient with a Mission Aviation Fellowship (MAF) helicopter to the Guido Valadares National Hospital (HNGV). The evacuation process with the appropriate transport is shown in Table 1.

No.	Clinical cases	Location	Transport used	Destination
1	Trauma (accident with vehicle/violence)	Capital Dili	Wagon ambulance	Close health facility
2	Puerperal (Pregnant women)	Community & municipality	Wagon ambulance and helicopter	Health centre & HNGV
3	Chest pain	Community & municipality	Wagon ambulance and helicopter	Health centre & HNGV
4	Hearth attack	Community & municipality	Wagon ambulance and helicopter	Health centre & HNGV
5	Stroke	Community & municipality	Wagon ambulance and helicopter	HNGV

Table 1 *List of emergency transports used to evacuate and/or transfer patients to health units in East Timor.*

Clinical cases at a community level, such as trauma due to road accidents/violence, for example, classified as fatal fractures, compound fractures and lethal injuries, are identified automatically by emergency service providers, and in this situation, patients are transferred to the HNGV. However,

simple injuries are continuously evacuated and transferred to the nearest health centre. On the other hand, cases of patients with chest pains and high fever are also evacuated and transferred to definitive care. In addition, postpartum cases are also evacuated and transferred to health centres and the HNGV. However, diabetic patients and stroke patients are evacuated from the municipality to the HNGV by helicopter for further treatment.

The Importance of the Emergency Department

The quality of the emergency medical service is a process of immediate intervention to save lives, to prevent or reduce the risk to patients before transfer to definitive care (St Marry, 2023). In this case, to save patients' lives, various clinical illnesses were attended to by doctors, nurses and midwives during the emergency services, as shown in Table 1. Several clinical cases were well attended to by the medical service providers and successfully evacuated and transferred to definitive care such as the HNGV.

The Role of the Emergency Medical Service

Many clinical cases require emergency medical services, such as road collisions, serious and infectious diseases, and evacuation of pregnant women, among others. The role of medical service providers is to serve the community by prolonging life and reducing disability (Childs, 1975). In this case, medical service providers play an extremely important role in dealing with emergencies by:

Providing pre-hospital services to patients.

Evacuation and transfer to health centres. Mild medical cases in the community are transferred to the level of Community Health Centres (CHC) and more serious medical cases are transferred to the HNGV.

Challenges and Opportunities Encountered by SNAEM

Current Opportunities

There are several opportunities to improve SNAEM soon. SNAEM hopes to recruit more permanent health professionals with experience in emergency medical services and allocate more budget to buy an ambulance

with basic medical equipment for basic and advanced life support. Most of SNAEM's managers support the emergency medical service with staff who control monitoring and supervision from the central office at the Becora and Comoro stations. Most of the health units collaborate with SNAEM in transferring patients from the community and municipality.

Challenges Encountered

SNAEM, as a new autonomous institution, faces some internal and external challenges:

Firstly, the number of permanent health workers at SNAEM is limited;

Secondly, the majority of personal emergency medical service providers are contracted.

Thirdly, there is a very limited number of ambulance vans to cover the whole country, which makes it difficult to reach all cases on time.

Fourthly, the infrastructure is inadequate for the ambulance service, both at the national and municipal levels.

Fifthly, the annual state budget is insufficient for SNAEM to recruit more health professionals.

Conclusion

This paper aims to present the existence of the SNAEM service as a new institution established in 2021 that represents a new reality in the emergency medical service in East Timor. Undoubtedly, this is a very welcome service in the country that has contributed to improving the health of the population. However, the allocated budget is still extremely limited, human resources are scarce and lack ongoing training, infrastructure remains inadequate and incipient, and the number of permanent health professionals is insufficient to cater for the country's emergency medical service. Transport and funding are completely inadequate to cover all of SNAEM's current needs.

It's worth remembering that, since 2021, SNAEM has been established to serve the community and the state of Timor-Leste from the total absence of evacuation emergency medical services to the current pre-hospital service, which is fast and accurate in evacuating and transferring patients to definitive care at the HNGV. To treat critically ill patients, for example, the SNAEM needs to evacuate patients from rural areas to the capital using a helicopter ambulance, a service that has never existed in the country. Since the service was set up, several emergency medical cases have been successfully evacuated and transferred from the municipalities to the capital. It is, therefore, necessary to invest more in this very sensitive area of health services, the SNAEM, and to develop a plan for total coverage at a national level, maintaining a precise and efficient response to all clinical cases through emergency medical teams equipped with adequate technological equipment and even more competent, capable of dealing with all adversities and diverse clinical situations throughout the national territory.

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