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# Air medical transport system

The Air medical transport system has become a well-established part of the emergency medical services in most parts of the world. The development of this has emerged with the identification of the association of early definitive care with a favourable outcome. The care of the patient should escalate during the transport and it should never be onlyconsidered as moving the patient fast.

The patients who can be transferred by air range from trauma, cardiac, obstetric, surgical, paediatric and neonates and sepsis, poisoning, burns and other medical emergencies. It has been used to transport patients from general care hospital to a tertiary centre or specialised trauma centre.

There are two types of air ambulances available, namely the rotary wing or the helicopters and fixed wing or air planes.

These air ambulances are equipped with monitoring devices, emergency drugs, resuscitation equipment, ventilators similar to the ground ambulance devices. All the emergency resuscitation manouvres can be performed in the air ambulance and these include chest drain insertion, intubation and ventilation, oxygen therapy etc. In ideal situation the air ambulance should be staffed by medically qualified personnel. This retrieval doctor preferably should be experienced in critical care such as anaesthesia, emergency medicine or intensive care medicine. A qualified paramedic staff with experience in prehospital care and critical care transport service should be a must in addition to the crew. The flight nursing officer should be able to provide nursing care for all types of patients and also it is better if they possess training in critical care. They should be able to manage inflight medical emergencies. In some ambulances where a doctor is not used, a nurse or paramedic team with remote medical control is used.

Compared with ground ambulance systems, the aero medical transport system has a shortened overall time which is definitely an advantage. But this service is found effective not only because of the speed. The ongoing care during the transfer is important as well. This may have been added by the superior preclinical therapy because of the availability of a highly qualified medical team.

In modern casualty management settings in the world, Critical Care Air Transport Teams (CCATTs) have become an integral component, allowing early transport of critically ill and injured patients to a definitive treatment unit. It is evident that in pre hospital care, the on scene involvement by a trauma surgeon as a member of the flight crew has delivered better results with more aggressive prehospital resuscitation, particularly in the areas of airway and ventilation management.[1]

There can be limitations like pulmonary damage and evacuation of patients with significant pulmonary impairment can be a potential for further respiratory deterioration on the flight.[2] The Acute Lung Rescue Team (ALRT) was developed to facilitate transport of these patients.[2] In these settings the involvement of the Acute Lung Rescue Team who is capable enough to set up advanced ventilator support will be beneficial. This also can be provided by incorporating a highly trained respiratory therapist to provide respiratory care. But in some instances lung injury in the trauma setting is so

severe and is found to have exceeded the capability of air transport.[3]

The total outcome depends on many factors. It is very important to take the correct decision of transport by air and ensure proper identification of the patients who will be benefited by the air transport systems. This will be done by appropriate triaging.[4]

Mechanism of injury, the anatomy of injury, age of the patient , loss of consciousness were used to triage and as dispatch criteria for severely injured patients and evidence has revealed different predictive results for each of the above factors.[5]

Despite three decades of experience with air transportation of polytrauma patients, the results of studies analyzing the medical effectiveness of Air transport systems specially helicopter emergency medical services (HEMS) remain controversial.[5]

The decision to use air transport systems is a medical decision, separate from the aviation determination whether a transport can be completed safely.

This facility is not freely available in Sri Lanka. For a developing country like ours, the cost can be a major limitation for the establishment and improvement for this service.[6]

In countries where this system is functioning smoothly, three types of services can be identified. Community based model, hospital based models and alternate delivery models.

It is high time that this important system is visited critically and implemented in our set up. In a country like Sri Lanka it is better that the air transport system is fully integrated with the state emergency health care system since it might not be able to work independently. The health sector could provide the medical and paramedical and nursing personnel and communication functions while the military air line crew can operate the aircraft and carry out the maintenance. More importantly we need national evidence-based guidelines for appropriate utilization of air medical transport for traumatic and non-traumatic patients. This also should include the training personnel and implementing suitable and applicable triage criteria for the effective identification of the patients for air transport.[7]

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