

# Air Medical Services & the Middle East

By: Dr. Fatih Mehmet GUL



The use of air medical services has become an essential component of the healthcare system in the world. Appropriately used critical care air transport saves lives and reduces the cost of healthcare. Helicopters fly point-to-point, minimizing time spent outside the hospital, and avoiding the traffic delays experienced by ground ambulances. Helicopter air ambulances are used for the transport of patients from the scene of an injury to a hospital, and for shorter flights between smaller hospitals and trauma centers or specialty hospitals (burn or cardiac centers, for instance). Fixed wing air ambulances (airplanes) are used for transporting patients on longer inter-hospital flights. In fact, 54% of all air medical transports are hospital to hospital, 33% are scene responses, and 13% are other types (e.g. organ procurement and specialty/neonatal/ pediatric team transport).

In 1926, the United States Army Air Corps used air medical service for the first time with a converted aircraft to transport patients from Nicaragua to an Army hospital in Panama. The first civilian hospital-based medical helicopter service was established in 1972 at St. Anthony's Hospital in Denver, Colorado. By 1980, some 32 helicopter emergency medical services (HEMS) program medical services with 39 helicopters were flying more than 17,000 patients a year. By 2005, 272 services operating 753 rotor-wing (helicopter) and 150 dedicated fixed wing aircraft were in operation in the United States. All aircraft-fixed wing and helicopter-conduct about 500,000 patient transports in the United States alone each year, saving millions of lives each decade.

Air medical service is a known lack of healthcare services in the Middle East. It is a need after considering road traffic accident statistics and poor rural hospital care levels. Regardless the very few numbers of private services, almost the entire air medical services are being conducted by governmental institutions (Army, Police, etc...) and most of them are operational for inter-hospital transfers. The system works and transfers patients after authority approvals which usually take along time to be issued. Other common problems with these services are the low level of medical

care quality and lack of quality standards and accreditation from any international air medical service institute (CAMTS, EURAMI, etc.).

Middle Eastern countries still don't have functional HEMS to cater directly to the public needs under a national prehospital emergency system. Saudi Arabian Red Crescent Society will be the first HEMS Operator in the Middle East with the sponsorship of Abdul Latif Jameel Community Services Programs. "Time is life" is a saying that means death and disability from severe injuries, heart attacks, strokes, medical and surgical complications, and other time-dependent conditions often can be avoided if the right care is provided quickly enough. The "Golden Hour" concept provides that on its way to the surgeon's knife in that first hour, a patient should benefit from an organized EMS system which provides increasingly advanced care (e.g. BLS to ALS to the physician-level care provided by air medical crews).

In the early 80's, the first analytical attempts to determine the life-saving impact on mortality by HEMS response to injury scenes began to appear, largely demonstrating reductions in mortality compared with ground systems. Examples of recent findings demonstrate that patients severely injured enough to require inter-facility transfer were four times more likely to die after the HEMS serving that area was discontinued; that HEMS reduced injury mortality by 24% in a multi-center study with some 16,000 patients in Boston; and that even injured patients in urban areas experienced a transport-time benefit with HEMS in 23% of the cases.

Helicopters and fixed wing aircraft cost millions of dollars to purchase or lease, operate, house and maintain. Highly trained crews available and the infrastructure which governs, trains, funds, supports, and links them and their service to the EMS system, are also expensive. As few systems are publicly funded, maintaining the availability of this essential resource inevitably translates into a single patient mission charge that seems expensive in comparison with a lower-priced ground ambulance for the same mission. It has proven a mistake, however, to make such an isolated comparison and to equate the lower charge with cost-effectiveness and the higher charge with cost-prohibitiveness. At least one carefully constructed economic model comparing helicopter versus ground EMS has been crafted. It demonstrates that on a system level (that is, funding a system of air ambulances versus a system of ground ambulances covering the same large geographic area and volume of calls), the cost per patient transported would be \$4,475 for the ground system and \$2,811 for the air system. A cost-effectiveness study of helicopter EMS for trauma patients by Gearhart and colleagues concluded that such service is, indeed, cost-effective.

Air medical services at the Middle East should be well-planned and integrated into the national healthcare systems in order to save avoidable mortalities and provide equivalent quality of healthcare service to the public. ■

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أصبح استخدام الخدمات الطبية الجوية عاملاً رئيسياً في نظام العناية الصحية في العالم. فالنقل الجوي في الحالات الطبية الصعبة ينقذ حياة الكثيرين ويخفض تكاليف العناية الصحية. تنتقل المروحيات من نقطة إلى أخرى في أقل وقت ممكن متجنباً ازدحام السير الذي تواجهه سيارات الإسعاف. وتستخدم مروحيات الإسعاف لنقل المرضى من مكان الحادث إلى المستشفى أو من مستشفى إلى آخر. هناك حاجة إلى الخدمة الطبية الجوية في الشرق الأوسط نظراً لإحصاءات حوادث السير والمستويات المتدنية للعناية في المستشفيات الريفية. يجدر أن تكون الخدمات الطبية الجوية مخططة بشكل جيد في هذه المنطقة ومدمجة في أنظمة العناية الصحية القومية بهدف إنقاذ المصابين وتجنب الوفيات وتوفير عناية صحية جيدة للجميع.

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