The Moto-Ambulance, a New Life-Saving Initiative in Lebanon!

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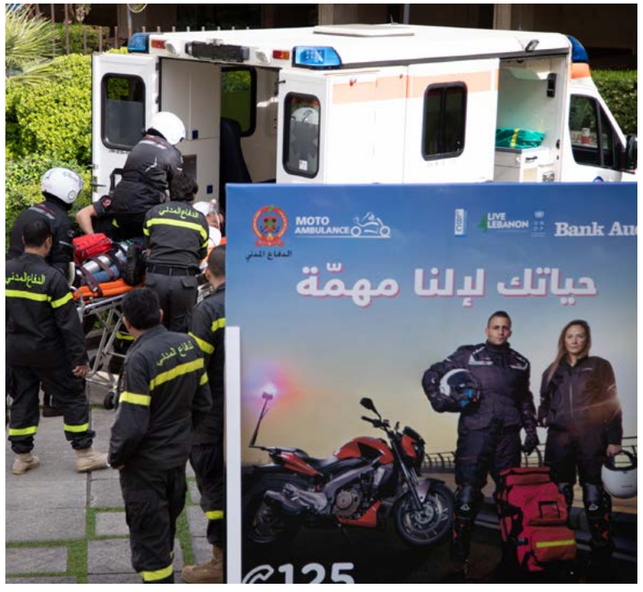
Background

Emergency medical services (EMS), defined as the system that organizes pre-hospital emergency medical care, play a crucial role in improving outcomes of life-threatening and time-sensitive conditions such as sudden cardiac arrest, myocardial infarction, and major road-accidents trauma. These conditions can cause premature mortality and disability if not addressed in an effective and timely manner. Lower response times will lead to better survival rate; hence, the importance of having efficient and swift EMS.
A response time of eight minutes has been reported as an acceptable standard time for EMS; however, this target is still a challenge in many countries including Lebanon. Initiatives to improve response time by using medical emergency motorcycles (MEM) (known also as emergency response units or motorcycle response vehicles), drones, or helicopters have been reported in different countries. This article describes the Moto-ambulance initiative that was launched recently in Lebanon, highlighting also the role that MEM can play to improve EMS.

Emergency Medical Services in Lebanon at a Glance

In Lebanon, EMS face several challenges at multiple levels including proper governance, availability of human resources, equipment, adequate infrastructure, and financial resources. These challenges might have their negative impact on the quality of the services provided. For example, not all EMS ambulances working in the country are equipped with automated external defibrillators (AEDs), which are crucial to save the lives of persons in sudden cardiac arrest. A study reported that AED was used by EMS providers in 0.9% of patients with out-of-hospital sudden cardiac arrest. The survival rate of sudden cardiac arrest is low (at 5.5%) with only 54.5% of survivors enjoying good neurologic outcome.

The EMS in Lebanon are underutilized with the majority of patients (78.8%) being transferred to emergency departments by private transportation as compared to 15.2% transported by EMS agencies. The Lebanese Red Cross reports that 38% of cancellations of their emergency calls in 2016 were due to transport of patients in private cars. Pre-hospital time, or the time interval from collapse to emergency department, was found to be better for patients transported by private means (a median time of 15 minutes) as compared to those transported by EMS agencies (median time of 28 minutes). Hence, response time is a challenge in Lebanon, with traffic playing an important role in that. This is so true in highly condensed areas and cities with severely congested roads such as Beirut. Having an alternative way to improve response time in Lebanon would save many lives especially in conditions where time plays a critical role.



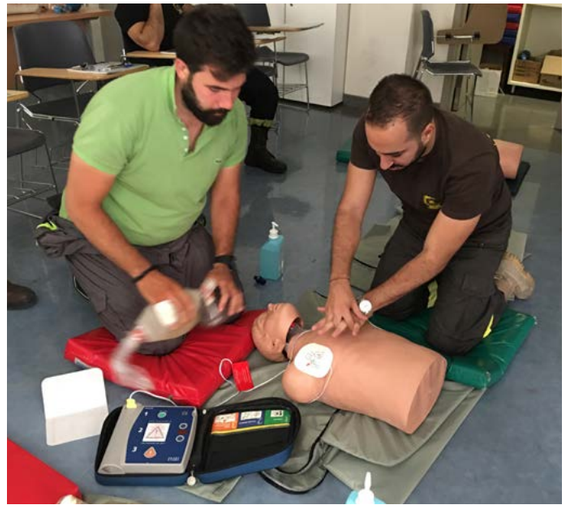
Medical Emergency Motorcycles at a Glance

The use of MEM has been advocated as a solution to improve the response time of EMS in urban areas congested with traffic. The characteristics of motorcycles in terms of size, speed, maneuverability and adaptability made them most suitable to reach patients rapidly in densely populated areas and during rush hours.
These motorcycles are operated by paramedics and they carry essential basic life support equipment and supplies. Using MEM would allow paramedics to reach the scene of accidents or life-threatening emergencies and provide immediate support, which includes starting cardiopulmonary resuscitation (CPR), using defibrillation, controlling hemorrhage etc., until the ambulance arrives.

The use of MEM has several advantages, with shortening response time being the most important. Other reported advantages include reduction of unnecessary car ambulances missions (non-transport rate of 32% in Taiwan, 18% in Portugal and 23.5% in Oslo), thus reducing cost and saving on availability.

The story behind the Moto-Ambulance Initiative in Lebanon

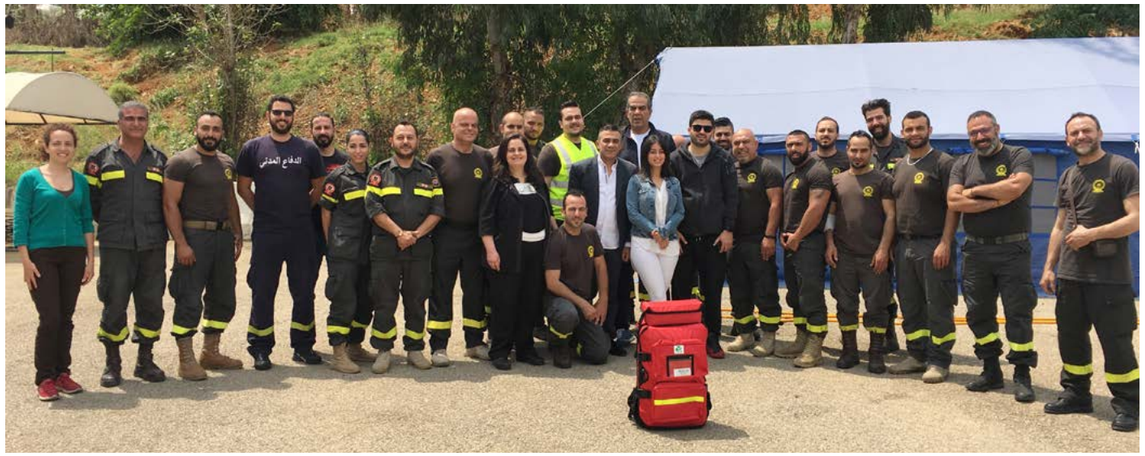
Hassan El Hage, a member of CHAMPS Fund and a former intern in Live Lebanon - United Nations Development Programme (UNDP), came up with the idea of having a Moto-Ambulance in Lebanon. Having lost his brother Hicham (son of the founder of CHAMPS Fund) to sudden cardiac arrest on



a football field on May 1, 2010, Hassan thought of an initiative that would increase the chances of survival for persons in life-threatening conditions by improving the response time. Why not have a motorcycle that can bring the paramedic and the AED as fast as possible and save the lives of persons in sudden cardiac arrest like Hicham?
CHAMPS Fund developed the idea further and submitted the project to Live Lebanon- UNDP's call for proposals on May 1, 2017.
Once the proposal was accepted, Live Lebanon-UNDP and CHAMPS Fund approached the Lebanese Civil Defense and the National Road Safety Council to work together and bring this project to life. With a generous support by Audi Bank, UNDP Goodwill ambassadors and LBCI-Lebanon, the Moto-ambulance became a reality in 2019.

Moto-Ambulance Initiative in Lebanon

The Moto-ambulance was officially launched on April 24, 2019 in the presence of and with a great support from Her Excellency Minister of Interior and Municipalities Mrs. Raya El Hassan and as a collaboration between Live Lebanon-UNDP, CHAMPS Fund, Lebanese Civil Defense, Audi Bank and LBCI-Lebanon.
Several preparatory steps were undertaken to ensure the efficiency of this initiative and the safety of the Civil Defense paramedic volunteers. Training sessions on Basic Life Support (BLS) were conducted in the Life Support Center at the American University of Beirut Medical Center, whereby the Civil Defense paramedics received



BLS certification by the American Heart Association. The paramedics were trained as well on operating the motorcycles and they received personal protection suits that prevent injuries. First Aid bags that include an AED, portable oxygen, basic airway management, tourniquet, cervical collars, sphygmomanometer stethoscope, capillary glucose meter, and thermometer among other equipment and supplies were ensured.

The first phase of this initiative included launching a total of six moto-ambulances in two major crowded cities: Beirut and Jounieh. More moto-ambulances will be operational soon in different geographical areas in Lebanon.

When calling the Civil Defense at the number 125, the moto-ambulance will be immediately dispatched with two paramedics carrying the first-aid bag to ensure a fast response and save lives; the car ambulance will be dispatched in parallel to provide additional support and to transfer the patient to hospital as needed.

Conclusion

This is the first Moto-ambulance initiative in Lebanon and it aims at improving the survival of patients affected with time-sensitive and life-threatening conditions through improving response time: “When every second counts, the Moto-ambulance can make the difference between death and life”.

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