SAS Journal of Medicine ISSN 2454-5112
SAS J. Med., Volume-3; Issue-8 (Aug, 2017); p-223-225
Available online at http://sassociety.com/sasjm/

Case Report

A Report Concerning Nocturnal Landing and Take-off Training in Cases Where VIPs Suddenly Become Severely Ill

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Abstract: In Japan, the main helicopters that transport patients are physician-staffed helicopters (known as doctor helicopters [DHs] in Japan), Fire and Disaster Management Agency (FEMA) helicopters, military (Self Defense Force: SDF) helicopters and Japan Coast Guard (JCG) helicopters. The FEMA, SDF and JCG helicopters also operate at night, from sunset to sunrise, but there are no available open data regarding nocturnal transportation from these agencies. Shizuoka Hospital was designated a relief medical hospital by the local government should VIPs suddenly become severely ill when visiting Shizuoka Prefecture. Accordingly, we conducted nocturnal landing and take-off training for the evacuation of a suddenly-ill VIPs using a Ground SDF helicopter under control of the local government. As the medical resources in this area are limited, nocturnal landing and taking off from a heliport are important for receiving patients at any time of the day or night in order to provide the best and earliest medical interventions. Repeatedly conducting practical training with military and civilian co-operation is essential for enhancing preparedness by improving our understanding of the local inhabitants near our hospital.
Keywords: military and civilian co-operation; nocturnal evacuation; helicopter.

INTRODUCTION

In Japan, the main helicopters that transport patients are physician-staffed helicopters(known as doctor helicopters[DHs] in Japan), Fire and Disaster Management Agency (FEMA) helicopters, military (Self Defense Force: SDF) helicopters and Japan Coast Guard (JCG) helicopters. Based on the latest open database, there are 50 DHs in 41 prefectures in Japan, and DHs were dispatched 26,259 times in 2015. FEMA helicopters were dispatched 3,456 times in 2014, and SDF helicopters were dispatched 380 times in 2015. JCG helicopters have been dispatched an average of 68 times a year for the last 40 years to transport patients. The FEMA, SDF and JCG helicopters also operate at night, from sunset to sunrise, but there are no available open data regarding nocturnal transportation from these agencies. In Japan, helicopters—including DHs—are equipped with a collision-prevention light and navigation lights for nocturnal flight. However, actually the helicopter requires special instruments for nocturnal instrumental flying in case of clouds. DHs lack these instruments and therefore have difficulty safely flying at night.

Shizuoka Hospital, which is associated with Juntendo University, is the base hospital for the Eastern Shizuoka DHs and is the disaster base hospital with an acute critical care center for Shizuoka Prefecture. Our hospital was temporally designated a relief medical hospital by the local government should VIPs suddenly become severely ill when visiting Shizuoka Prefecture. The trip to our hospital takes 90 minutes by ambulance, but only 15 minutes by helicopter; the short flight time ensures the smooth and rapid accommodation of VIPs who suddenly become severely ill and thus require the helicopter to be able to perform a nocturnal evacuation. Accordingly, we conducted nocturnal landing and take-off training for the evacuation of suddenly ill VIPs using a Ground SDF helicopter under control of the local government.

CASE REPORT

Helicopters weighing up to 5500 kg can land on the heliport at our hospital. For this training, we therefore selected a UH-1J belonging to the Ground SDF, which weighed a maximum of 4,772 kg. The training date was March 22, 2017. The weather was fine. The UH-1J took off from Camp Tachikawa in Tokyo. After landing and taking off once from the heliport at our hospital, the UH-1J returned to an aircraft fueling station. After taking off again, the UH-1J landed on the temporary heliport near where the

mock VIP was located, picked up the mock patient, and took off. The UH-1J then hovered in the air near our hospital. After sunset at 5:58 PM, the UH-1J landed on the heliport at our hospital at 6:11 PM with ground (marshaller) guidance (**Figure 1**). At the marshaller's indication, a stretcher was set beside the UH-1J, and the mock patient was transferred onto the stretcher. From landing to taking off from the heliport of our hospital, the UH-1J did not stop its engine, and the transfer of the patient from the helicopter to the stretcher was performed with the rotors moving. After the patient was transported to a safe zone on a stretcher, the UH-1J took off and returned to Camp Tachikawa at 6:19 PM (**Figure 2**).

Fig-1: Training scene. The UH-1J belonging to the Japan Ground Self Defense Force lands on the heliport of our hospital for the first time.

Fig-2: Training scene. The UH-1J belonging to the Japan Ground Self Defense Force takes off from the heliport of our hospital after discharging a mock patient.

DISCUSSION

The merits of the nocturnal air evacuation of patients by helicopter include the early transportation and subsequent early reception of optimum medical treatments, resulting in a favorable outcome. However, the nocturnal air evacuation of patients by helicopter is also associated with fatal crashes due to disorientation induced by degraded visibility at night [1]. Another disadvantage of nocturnal air evacuation is that the noise from helicopters landing and taking off may

adversely affect the health of people living near a heliport [2]. As Japan has the ninth-highest population density in the world, the nocturnal landing and taking off from the heliport was executed in a limited area. However, our hospital is a disaster base hospital and will likely receive several severe patients in the event of a large-scale disaster. Accordingly, this training proved to be a good model for receiving and leaving patients even at night using Ground SDF helicopters. As the medical resources in this area are limited, nocturnal landing and taking off from a heliport are important for receiving patients at any time of the day or night to provide the best and earliest medical interventions. Repeatedly conducting practical training with military and civilian co-operation is essential for enhancing preparedness by improving our understanding of the local inhabitants near our hospital [3].

CONCLUSION

As the medical resources in this area are limited, nocturnal landing and taking off from a heliport are important for receiving patients at any time of the day or night in order to provide the best and earliest medical interventions including a huge disaster situation. To accomplish this purpose, repeatedly conducting practical training with military and civilian co-operation is essential for enhancing preparedness by improving our understanding of the local inhabitants near our hospital.

Conflict of Interest

The authors declare no conflicts of interest in association with the present study.

Funding

This work received funding from the Ministry of Education, Culture, Sports, Science and Technology (MEXT)-Supported Program for the Strategic Research Foundation at Private Universities, 2015-2019. The title is "The constitution of a total researching system for comprehensive disaster medicine management, corresponding to a wide-scale disaster".

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