



Fig. 1: The Doctor-Heli program was implemented in April 2001 and since then, the number of HEMS bases has increased to 41 (Photograph: AW)

HEMS in Japan: Expanding the Doctor-Heli program

Japan's HEMS system, the so-called Doctor-Heli program, was inaugurated in April 2001. Since then, the number of HEMS bases increased to 41 (as of December 2013). HEMS in Japan lagged behind the development of HEMS in Western European countries. In Germany for example, it was right after the reunification in 1990 that the number of HEMS bases had reached 40. What had taken about 20 years in Germany (the first HEMS base was set up in Munich in 1970) – the establishment of a large number of HEMS bases – took place in Japan within a short period of time – only 11 years. Considering the fact that the land area of both the countries is almost identical, the speed of HEMS establishment in Japan is much faster than it had been in Germany. And the prospects are good for a further expansion of the Doctor-Heli since the Japanese Ministry of Health, Labour and Welfare plans to add several HEMS operation bases next year as well.

Authors:

Wataru Nishikawa

Director HEM-Net
Japan
w.nishikawa@gmail.com

Yutaka Yamano

Director HEM-Net
Japan
yamano98@peach.ocn.ne.jp

There are three main reasons for this success. Firstly, the highly effective performance in HEMS life saving missions helped to speed up the establishment of more helicopters and bases for the Doctor-Heli. Secondly, the helicopter operation costs are covered through central (90%) and local (10%) government funds. Initially it was planned to cover the operational costs by the health insurances, as is the case in Germany.

However, after time consuming discussions, the majority agreed to cover the expenses for HEMS by public funds as well (as is the case in Japan with ground EMS) since the objective is that patients should be free from the financial burden that they would have to face in case of medical treatments in a non-public system. There were some concerns raised about the financial situation of the central and local governments and if this becomes even more difficult, it might

be impossible to cover the operational costs by spending public funds for the continuation of the Doctor-Heli program. But these concerns were allayed and priority given to HEMS as life saving missions. Consensus was reached that these funds should not be reduced.

The third reason for the fast spread is safety. In fact, so far there were no accidents since the establishment of the Doctor-Heli. In the beginning, safety concerns were prevalent. However, accident free operation results in the past 11 years since the start of the program allayed concerns about helicopter reliability, and many local governments changed their attitude towards the implementation of Doctor-Heli ops.

Maintaining safety

Safety of the Doctor-Heli has been maintained by adhering to the following rules:

- Do not fly night missions. This may be regarded as the number one factor for safety. HEMS operations are restricted to daytime, from 8 a.m. to sunset. In case risks for a HEMS mission are too high at the accident sites – stemming from low visibility etc. – a ground ambulance is being dispatched instead.
- Avoid landing in unsafe areas. In order to reduce risks stemming from landing in unsafe areas, certain official “landing points” have been established. These have been declared as being safe for Doctor-Heli missions. There are almost 700 such official landing points that are confirmed to be safe. From these points, the Doctor-Helis cover a radius of 50 to 70 km. One of these spots, the nearest to the scene, is then chosen for landing. A HEMS operator investigates the environment beforehand (ground of the school, a park, a riverbed, vacant land, etc.) and confirms its safety for Doctor-Heli landing in accordance with permission of the owners or responsible administrators.

When a mutual agreement has been reached, Doctor-Heli will land on these places. Previously arranged landing point for HEMS are called “rendezvous points”. These points are named and numbered for an easy exchange of information during a Doctor-Heli mission. The staff involved in the mission includes the hospital and EMS personnel (also the staff responsible for transportation of a patient to the nearest rendezvous point). The Doctor-Heli lands at these points and thus a HEMS doctor can provide medical treatment to the patient immediately after landing, and the patient is transported – either by Doctor-Heli or by the ground ambulance – to a trauma center after his/her condition is stabilized. As a matter of fact, the Doctor-Heli may land at any place other than those predefined rendezvous points, depending on the scene, for example in the case of a road accident.

- Third factor for safety: All the Doctor-Helis are powered by two engines and have been approved for Category A under FAA rules or Category Group A under CAA rules, which allows continuous flights even if one engine is inoperative without emergency landing.



Fig. 3: After time consuming discussions, the majority agreed to cover the expenses for HEMS by public funds as well – as is the case in Japan with ground EMS (Photograph: ??)



Fig. 2: The number of Doctor-Heli bases increased by 9 bases (and choppers) in 2012 (Photograph: ??)

- And finally only one pilot gets on the flight, but a mechanic takes the seat next to the pilot to carry out communication with an emergency medical team and external environmental obstacle monitoring to reduce workload of the pilot. He sometimes takes the role similar to a co-pilot.

Still some way to go

The number of Doctor-Heli bases increased by 9 bases (and choppers) in 2012. This is the highest increase per year ever, now totalling to 41 bases. As mentioned above, Japan's land area is almost the same as of Germany, and the German HEMS network covers 94% of the land area. Around 100 operation bases in Japan will be necessary if one wants to reach the same ratio (number of bases in relation to land area) as in Germany, since Japan is more mountainous compared to Germany. For that reason, effectiveness of the helicopters of Japan will be higher in medical evacuation missions. The current state of Japan's HEMS network is still far from a perfect coverage and halfway to the ideal condition, but, as mentioned before, further enhancement is expected.