

# 6. Dispatch

## 6.1 Tasking

### 6.1.1 The Importance of Good Tasking

Tasking of the aircraft is one of the main determinants of the success of a HEMS operation. Tasking is usually dealt with by the Ambulance Service. HEMS success is dependent upon finding the right jobs, arriving in a timely manner and delivering advanced interventions to the patients before transporting them to the most appropriate hospital. Any break in that chain will result in a failure of tasking with potentially serious implications for both the patient and the HEMS organisation.



### The Financial Cost of Poor Tasking

The role of HEMS in the UK has to be considered as twofold; firstly as a delivery platform for specialists with advanced critical care skills; and secondly as a means of expedient transfer of patients to definitive care at specialist centres. Tasking and deployment of assets should therefore be targeted towards cases in which advanced care interventions are likely to be required and/or where delays in reaching a specialist care centre will adversely affect the patient. Non-conveyance by helicopter alone should not be used as an independent marker of the efficiency of HEMS operations. A holistic approach to the assessment of efficiency of HEMS operations, including the delivery of clinical interventions at scene, should be adopted.

Mission cancellations perhaps offer the most accurate and reproducible assessment of the efficiency of tasking and deployment of HEMS teams. In the UK the proportion of missions resulting in cancellation of HEMS teams before they reach the scene varies between approximately 20% to 40%. The tasking policies used by HEMS services in the UK generally lack scientific foundation and are normally based on criteria derived from consensus or expert opinion. Further research is required to derive, test and validate tasking criteria that predict the likelihood of patients having suffered life-threatening or life-changing injuries or time-critical illness. This approach will ensure that deployment of assets is better targeted to those in greatest need of life-saving advanced care interventions from HEMS clinicians at scene and expedient transfer to definitive care by helicopter.

### Potential Litigation as a Result of Poor Tasking

On 6th April 2008 the Corporate Manslaughter and Corporate Homicide Act 2007 came into force, creating a new criminal offence for organizations causing death through gross negligence. Under the new law, an organisation will be found guilty of corporate manslaughter if it is proved beyond reasonable doubt that:

- the way in which its activities are managed or organized caused a person's death; and
- this amounts to a gross breach of the duty of care owed to the deceased.

The law applies to charities as well as statutory bodies.<sup>39</sup>

A gross breach of duty is defined as conduct that falls far below the standard that can reasonably be expected of the organization in the circumstances.

As public perception and culture changes, it will be inevitable that the public will expect the highest standards of care, wherever and by whomever it is delivered. As the public become more aware as to what resources and care can be provided, an inappropriate response could result in the Ambulance Service facing litigation or even charges of corporate manslaughter. The potential is not restricted to Ambulance Services. Charities need to consider the implications including training, governance, qualification of staff and resource delivery protocols.

## Call Selection

Helicopters are an expensive resource and their use is not without risk. Whichever tasking system is in operation some decision has to be made, either in the control room for primary responses or at the scene for secondary responses, about which incidents HEMS should be dispatched to. This requires some form of call selection to identify calls that may benefit from a HEMS response and therefore appropriate deployment. A variety of criteria have been proposed and used to try and identify calls suitable for a HEMS response.

There are no definitive guidelines for call selection and HEMS tasking. The AAA recognised this and has developed best practice guidelines to assist in developing criteria nationally that can be utilised for different models and areas of cover (i.e rural, urban). At present individual services develop their own deployment strategies adapted to local circumstances. However, there are some basic principles that should be taken into account:

- the purpose of aero medical emergency transfer is to provide better initial patient care and transport than available alternatives
- air response is only justified where the speed of transport, skill of the medical team and/or ability of the helicopter to overcome environmental obstacles contribute to improved patient outcome
- in trauma, helicopter deployment is not justified if it does not significantly reduce the time between injury and the patient arriving at an appropriate hospital unless the response delivers additional medical expertise or equipment to the scene.

The dispatch system used is immaterial, call selection is the critical issue, and every effort therefore should be put into developing a national clinical response standard and educating those responsible for dispatch.

### 6.1.2 Tasking Responsibilities

On a daily basis responsibilities in the dispatch phase should include:

#### (i) Tasking Authority

- Identify incident against dispatch criteria
- Identify the classification for dispatch
- Identify the availability of air ambulance assets
- Balance dispatch against other air assets known to be deployed.

#### (ii) Pilots

- Legality of flight and passengers
- Serviceability of aircraft
- Limitation of weather
- Pilot duty hours and discretionary options
- Endurance of aircraft
- For inter-hospital transfers, availability and serviceability of landing facilities at destination.

#### (iii) Medical personnel

- Confirmation of incident classification based on medical information
- Medical benefit able to be brought to patient (both by aircrew & by destination hospital options)
- Serviceability of medical equipment on aircraft.



### 6.1.3 Principles and Criteria

Deployment under HEMS / air ambulance requirements is governed solely by the clinical urgency of the patient. Therefore:

- there should be clear tasking criteria
- the clinical need must be ascertained prior to a HEMS tasking
- all persons connected with the decision making process in tasking an air ambulance should have a working knowledge in the difference between air ambulance and HEMS classifications. This includes:
  - what tasking under each classification the pilot is permitted to undertake
  - what tasking under each classification the pilot is not permitted to undertake
  - the responsibility to correctly classify a tasking
  - the limitations dictated by the regulations
  - the fluid nature of classification after the initial dispatch as updates from scene become available, and the need to ensure the pilot (via the medical aircrew) is made aware of any changes
- regular and transparent monitoring of tasking should be undertaken by the tasking authority, in conjunction with the air ambulance operation, to ensure correct practice in tasking under HEMS / air ambulance.



Dispatch Criteria/Protocols should be established to ensure a consistent standard of tasking. Although the exact content of the Dispatch Criteria should be for individual operations / tasking authorities to decide, best practice would dictate that reference should be made to:

- medical / trauma criteria for considering dispatch
- minimum level of information available before a dispatch can be effected
- geographical limitations
- access to incident
- patient conditions not suitable for air ambulance conveyance
- medical skill of aircrew to meet patient need
- availability of other suitable medical resources
- treatment centre locations / distance / speciality services
- who is able to stand down an air ambulance once deployed (i.e. medical personnel only or other persons).

The opportunity for ground ambulance crews to request the air ambulance team to attend should be factored in, to cover situations where additional clinical skills, over and above those of the attending paramedic, are required; or the patient's location necessitates the use of a helicopter.

### 6.1.4 Quality of Tasking

Tasking authorities should work in conjunction with the Air Ambulance operation to provide a robust system of deployment, both strategically and on a day-to-day basis. The system should ensure best practice and continual organizational learning about supplying a helicopter medical service. Best practice benchmarks or guidelines may prove useful. Comparative performance measures should be considered.

Times of dispatch need to have agreed start and end points and there are several key points where unnecessary delays may cause medically poorer outcomes for HEMS missions. The following need to be defined and performance measured:

- call origin time

- dispatch started
- dispatch completed
- aircraft lifts
- aircraft overhead
- aircraft landed
- medical team at patient's side
- medical team depart for hospital with patient
- medical team land with patient
- medical team arrive in resus' room or hospital department.

Regular review meetings looking at tasking statistics / problems / successes should be held between the Tasking authority and the Air Ambulance operation, to enable a communication pathway which will enable correct and best practice to flourish and to facilitate the development of service improvement.

### 6.1.5 Stand-down

Each operation should have a stand-down guideline for Emergency Department ground staff and a standard operating procedure for cancelling HEMS missions. This is to ensure:

the information deemed minimum for cancellations is documented, particularly if the mission classification legally alters to 'air ambulance' after a cancellation. This will provide a defensible policy in case of legal actions taken against the Ambulance Trust or air ambulance charity for failure to provide potentially life-saving interventions on scene or transport to a hospital with the right specialties, following a cancellation. The policy should contain statements as to the qualification level of staff in attendance at the incident that can cancel the response and the implications of the decisions made regarding efficient use of the helicopter.

Following the roll out of the Airwave Radio fit, direct ground to air communications have greatly improved to assist with the decision making process.

## 6.2 Restrictions on Mission Type

The staffing of the HEMS crew should be guided by predicted regional medical requirements, and operations should be designed around serving those patients who will benefit from helicopter services. If the predominant need is acute retrievals and critical transfers then the trauma team who can provide the requisite skills should be recruited or trained. If the predominant need is primary trauma care, then whichever clinicians can best care for that patient group should be selected or trained.



### 6.2.1 Hours of Operation

Until recently, HEMS operating hours have been restricted by the Civil Aviation Authority in terms of both pilot duty hours and official daylight hours. Any infringement of either is taken very seriously and can be investigated by the CAA, leading to suspension of the pilot or the aircraft operator's licence. Consequently, pilots' hours are strictly regulated, governed and monitored. HEMS pilots are limited to 60 hours per seven days. In summer, when a pilot may exceed his hours during a HEMS call, they must reclaim the time during the next shift to maintain overall compliance.<sup>32</sup>

### 6.2.2 Night Flying

In addition to pilots' duty hours, HEMS operating times are usually governed by official daylight; however in October 2012 the CAA issued a Safety Directive (SD-2012-04) outlining the requirements for HEMS operations at night.

JAR-OPS do allow flying at night but until recently it was only approved if an aircraft lifts from and lands upon a 'class one landing site'. Examples of class one landing sites include secure airfields, airports and a few night-lit, approved hospital helicopter pads. On HEMS operations it is highly unlikely that any primary HEMS mission landing at an incident will be on a designated class one site. Police ASUs can and do land near to life-threatening incidents at the request of the emergency services. They are able to do this because any potential landing site is surveyed by a traffic police officer for size and hazards, before marshalling the aircraft down. In addition police aircraft are fitted with night vision aids to facilitate landing at ad-hoc sites.



Notwithstanding primary HEMS, certain ambulance services have tried to establish night-time HEMS capability by reconnoitring permanent sites in locations where they could land in response to a nearby incident. There are several risks associated with this:

- a site surveyed in daylight may not be safe at night – security is unlikely to be absolutely guaranteed, and the risk of Foreign Object Debris (FOD) or unseen, newly applied hazards exclude this
- if the helicopter lands in a pre-determined site away from the incident, transport from the site to the incident cannot be guaranteed by the police
- a transfer from the incident to the aircraft by road may be required. In an unstable patient, additional unnecessary movement increases the risk to the patient.

If an Air Ambulance Unit is involved in night-time air ambulance operations or night-time recoveries to base then it is good practice to involve all the aircrew in additional training, additional CRM training and regular night exercises.

In addition, several pre-hospital schemes now provide a twenty-four hour HEMS-equivalent response to metropolitan areas by moving their paramedic–physician team into fast response cars during the night or on no-fly days. Different schemes have variable results in terms of effectiveness and time to scene when comparing outcomes with 'normal' HEMS. <sup>26,32</sup>

### 6.2.3 Weather Restrictions

Although HEMS operations are able to fly in most weather conditions, there are extreme weather conditions which would preclude deployment.

Visual Flight Rules (VFR) and Instrument Flight Rules (IFR) are laid down by the Air Navigation Order. An IFR-approved aircraft can fly both VFR and IFR. Essentially this means:

- that pilots should be 'current' on the aircraft and in using the modes of flight dictated by normal HEMS duties
- the aircraft must always be flown 'within limits' which will be weight dependent and significantly influenced by air density and temperature and consequently the weather
- HEMS pilots usually fly to VFR or Special VFR although some can fly on instruments if the weather closes in and the aircraft has IFR capability. In the vast majority of cases however, HEMS operations will only fly within the visual limits laid down by law.

An IFR capability does not guarantee a service whatever the weather; and the range of the aircraft is restricted compared with its VFR capability.

The IFR implication is that in moderate weather it might be possible to transit IFR to a suitable airfield for a let-down but not transit VFR onwards to the destination hospital - an ambulance would be required for the final leg of the journey. This is probably not a major problem but it would need to be taken into account.

Icing is not something that has to be dealt with as a VFR operation. However even if the temperature on the ground is well above zero it does decrease with height and during the colder winter months the level at which the temperature in cloud reaches zero can be lower than the minimum safe height. This would prevent HEMS flying IFR and yet still be able to fly VFR.

### 6.3 Transfers

The current level of transfers undertaken by UK air ambulances is relatively low in comparison to HEMS activations. Whilst the use of an air ambulance can bring clinical benefits to patients who require transfer, transfers are predominately secondary missions that take the aircraft away from its primary role as a HEMS aircraft.

There should be a transfer policy in place in conjunction with the charities, Critical Care Networks, Ambulance Services and the main Acute Trusts served by the Ambulance Service(s).

The level of involvement of individual operations within transfers will also depend on the charitable objectives of the funding charity. Therefore any request to transfer patients should be justifiable not only on the clinical benefit and / or operational availability but also on the funding charity's policies.

The crew configuration decision for any transfer should be made following a direct conversation between the medical personnel concerned. Factors to take into account are:

- level of patient care – can a crew of two Flight Paramedics provide all the patient care required?
- is the presence of a Critical Care Paramedic (CCP) required due to their advanced skill base?
- is the HEMS Flight Doctor required and does the Flight Doctor have all the requisite skills required to care for the patient?
- is the presence of a hospital doctor required due to the complicated nature of the patient's condition?

It is advisable that the unit's Flight Doctor or on-call Medical Advisor undertakes the discussions with the hospital concerned and then makes the documented decision as to the crew configuration.

