Best Practice Guideline

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Scope

To identify the appropriate incidents for HEMS teams to attend.

1 Introduction

1.1. The tasking process of Air Ambulances or HEMS is pivotal in the success of each service. Identifying the clinically vulnerable patient at an early stage and dispatching an appropriate resource is essential to ensure as good an outcome as possible. Appropriate tasking avoids unnecessary cost and risk through inappropriate aircraft and vehicle movements.

1.2. It must be borne in mind that Air Ambulance Services work in differing ways. The approach to tasking an aircraft to provide an ambulance response in remote locations will be different from the dispatch of a Doctor / Paramedic team focusing on major trauma or critical illness. Most systems fall somewhere between these two ends of the spectrum.

1.3. In HEMS systems in Europe and Scandinavia where the paramedic / nurse plus physician model is common; there is usually a clinician in the dispatch decision process, most commonly a nurse or doctor.

1.4. There are a number of issues that need to be considered.

1.4.1. Safety. Using aircraft in emergency situations does have inherent risks attached. These risks are mitigated by strict aviation legislation, crew regulations and governance. Accurate and appropriate tasking will form part of the risk management structure/procedure.

1.4.2. Effective use of resources. Doctor and paramedic teams are a highly useful resource. Accurate tasking ensures the most clinically vulnerable patients are reached. Likewise, tasking unnecessarily...
means that the team may not be available for patients who have a genuine need if they are already committed. Emergency culture and enthusiasm is maintained if it is known that tasking process will specifically identify the high acuity calls.

1.4.3. Cost. Charitable resources need to be used carefully and it is inevitable that ineffectual tasking will increase cost.

1.5. An ideal system would have an experienced dispatcher, together with a HEMS/Critical Care Paramedic, in a single control room for the whole area covered, working on a single Computer Aided Dispatch (CAD) system, with the ability to audibly monitor incoming 999 calls, with robust auditing and governance to ensure accuracy and consistency.

2. Dispatch Personnel

2.1. Where a system uses aircraft to access remote patients, non-clinical Control staff can appropriately task and dispatch the team.

2.2. Where a system provides a response for both remote access and on clinical need, then a specific dispatch desk should be utilised. If non-clinicians are used, it is important that there is consistency in dispatchers and that the team is appropriately audited and developed.

2.3. For systems responding only to the critical patient (medical or trauma) then HEMS/Critical Care Paramedics are best at identifying the most clinically vulnerable. This can be as part of a team with a HEMS dispatcher.

2.4. Whilst the Ambulance Service has responsibility for dispatch decisions; to avoid delays, ‘tasking by committee’ should be avoided. It is important to have an ethos of ‘control being in control’. The Air Ambulance Dispatcher (whether clinical or not) has to be the one who makes the decision to dispatch. With that responsibility needs to be accountability but this should always be done retrospectively (by audit). The clinical decision to dispatch should not be discussed with doctors, pilots or HEMS paramedic at the time. Clearly, if there are safety, weather or maintenance issues that preclude the team from lifting, then the mission can be stood down but there should never be discussions on the appropriateness of the call.

3. Dispatch Location

3.1. Whilst some systems use computer systems remote from the ambulance control room (usually at the air ambulance base), the most productive location for the dispatcher is in the Ambulance Service Control room.

3.2. In Ambulance services that are still working with more than one control centre, there should be only one dispatch desk located appropriately.
3.3. If there is more than one CAD system used by a Service, then the dispatch desk should be able to monitor and access all calls coming into that Service, regardless which CAD system it comes in on.

4. Types of dispatch

4.1. Immediate dispatch

4.1.1. This is defined as the dispatch of an aircraft immediately on the identification of one of a set of pre-determined criteria. It is also called ‘auto launch’ in some services.

4.1.2. These criteria are based on mechanism of injury, anatomical injuries and or physiological abnormalities.

4.1.3. Setting these criteria should be an agreed process involving the local ambulance service, the Air Ambulance Medical Director and the Charity.

4.1.4. The criteria should be tailored to the needs of that area and audited for accuracy. Immediate dispatch calls that evolve through local need in one area may not be appropriate elsewhere in the country.

4.1.5. The advantage of this method is that it reduces the time for the Air Ambulance team to get to the scene. However, it has limited specificity and the accuracy rate is not as high as in other dispatch types. Recommended dispatch criteria is listed in appendix 1

4.2. Interrogated dispatch

4.2.1. This is a method of identifying HEMS suitable calls that has proven to be the most accurate and timely of all.

4.2.2. Interrogation is rarely used outside the UK and has been developed over the last twenty years by a number of services in this country.

4.2.3. Interrogated dispatch requires phoning the 999 caller to ask further questions in order to obtain the necessary clinical picture.

4.2.4. This process can be successfully carried out by a non-clinical dispatcher, using a set of predetermined questions. However, in systems responding to only the sickest/severely injured patients, it is far more potent when carried out by a HEMS/Critical Care Paramedic, trained in dispatch methodology. They are able to use a more loosely defined question structure that can be adapted as appropriate. Suggested questions and techniques are in appendix 2.
4.2.5. In systems where there is the technology available to monitor 999 calls as they come into the Control room, this should be actively done. In many cases, the 999 caller gives far more information than is transcribed by the call taker and an experienced paramedic can gain a clear picture at a very early stage. If this system is not available, active work at developing this will reap rewards if it is technically possible.

4.3. Ambulance Crew Requests

4.3.1. This relies on crews requesting air ambulance support once they have arrived on scene. Whilst this should be the most accurate method of tasking an Air Ambulance team, in reality there are a number of drawbacks.

4.3.2. The most important of these is that it can add considerable time to the dispatch process, which may be critical for the doctor / paramedic systems where advanced interventions are required.

4.3.3. When audited, it has been shown that an advanced interrogation process is as accurate as crew requests and will dispatch the team more quickly.

4.3.4. It may be appropriate to question requesting crews if it is felt that the request may be inappropriate for the team. There is a wide variance in the accuracy of on scene triage by ambulance staff and some requests may not require either the advanced skill set, or the use of an aircraft to convey. The HEMS dispatcher should be empowered to support the land crews to make the best clinical and triage decisions.

5. Dispatch time targets.

5.1. There should be targets for the dispatchers to pass the call to the HEMS team and this should be a Key Performance Indicator (KPI).

5.2. The measured time target starts at the ‘Call Connect’ time and the time the call was passed to the team as the end point.

5.3. Local targets could be set but it is recommended that a target of 3 minutes should be in place for immediate dispatch and 8 minutes for interrogated dispatch.

6. Cancelled calls / stand downs / aborted missions
6.1. There are multiple terms to describe the aircraft not getting to/arriving at a call that it was dispatched to. It is important that clear, universal terms are used and understood if meaningful data is to be gathered. It is suggested that the following terms are used.

6.1.1. Abort or aborted mission. This should be only used when the aircraft cannot reach the scene due to weather, time of day or mechanical problems.

6.1.2. Cancellation should be used when the aircraft is cancelled en-route on arrival of the land ambulance, because that crew they felt that the aircraft’s attendance was not necessary.

6.1.3. Cancellation rate should be used as a KPI but there needs to be clarity on what is measured. Due to the nature of HEMS work, it is likely that the aircraft will be dispatched to patients whose injuries are so severe that they are dead on scene by the time the land ambulance arrives. Since the performance indicator is to measure the effectiveness of the dispatch system, including this group in cancelled calls is inappropriate. Therefore, the cancellation rates should only include calls that the patient(s) injuries were not serious to warrant an Air Ambulance attendance.

6.1.4. There is a risk that there can be too much focus on stand down rate. One service found that a strong focus on reducing abort rate actually meant that the overall dispatch rate fell. It was likely that the dispatcher felt they would be admonished for having a high stand down rate and therefore developed a higher tolerance to dispatching with the consequence that an appropriate mission being missed.

7. Missed calls

7.1. A mature system needs to identify the missed calls that would have benefited from either the speed of transport and / or the clinical expertise of the Air Ambulance team.

7.2. With the use of the Trauma Audit and Research Network (TARN), it is possible to identify all major trauma patients and, therefore be able to see which patients have been conveyed by the Air Ambulance team. This is pertinent in systems responding as part of the major trauma response for their area.

7.3. Once missed calls have been identified, investigation into why these were missed engenders a ‘quality assurance’ mentality as well as identifying cause.

8. Audit and Governance

8.1. Audit of the dispatch process is imperative in order to maintain quality or if improvement in accuracy is sought.

8.2. A review process should be undertaken regularly to identify strengths and weaknesses. KPI data should be collected monthly and a selection of calls should be reviewed from a dispatch decision perspective.
8.3. Appropriate targets should be patient outcome, accuracy based on clinical need, cancellation rate and time to dispatch

8.4. Appropriate HEMS calls that have not been dispatched on should also be identified, although whether this should be a KPI is a matter for local discussion

8.5. Missed calls can be identified through TARN data, media reports, liaison with other emergency services, or snapshot audits of local hospital ITU / ED departments to identify HEMS-suitable patients that have not been dispatched to.

9. **Mutual Aid and Major Incident tasking**

9.1. All Air Ambulance Services should maintain strong working relationships with their surrounding services to ensure that, where necessary, help can be called upon for uncovered incidents or those of significant magnitude.

9.2. A system should be in place to allow each Service to be aware of the availability and crew configuration of its neighbours.

9.3. In Major Incidents, it must be borne in mind that the decision to task additional recourses (including HEMS teams) is made by the Incident Commander. The HEMS dispatcher should liaise with them prior to any requests made to other Services.

**Appendix 1. Immediate dispatch criteria.**

*Immediate dispatch criteria used by the majority of services:*
Road Traffic Collision (RTC) with associated fatality
RTC ejected from vehicle
Falls from equal to or greater than 2 floors
RTC – trapped under vehicle
Person under (or hit by) train
Amputation above wrist or ankle
Penetrating trauma to torso

*Immediate dispatch criteria used by 2 or more services*
Aviation incident/crash
Severe burns
Other immediate dispatch criteria;
Cardiac arrest in remote location
Near drowning
Any paediatric trauma.

Appendix 2. Suggested interrogation questions and techniques.

Interrogation can be in two forms. The passive or ‘silent’ interrogation is when a decision to dispatch is reached through monitoring the call in progress because the information obtained is sufficient for the medical team to be dispatched.
Active interrogation is when the 999 caller is re-contacted or the call is passed to the HEMS/Critical Care Paramedic from the call taker. In this instance, the paramedic will ask a series of questions in order to get a clear picture of whether HEMS resources are required.
The interrogation structure should be left ‘loose’ in order that the paramedic can adapt their questions appropriately. The skill is to be able to obtain a mental picture of the scene through piecing together all the information that is available.
However, there a number of suggested questions that can guide staff or are used to identify the potential quality of the informant.

The Initial Questions
When you connect with the caller, introduce yourself:
‘Hello, you are talking to a paramedic in the control room. I need to ask you a few more questions and I am not delaying help, which is on its way’
  • Are you still on scene?
  • Can you see the patient?

If the answer to these is negative and the caller cannot quickly reach the patient and there are other calls for the same incident, then quit the call and ring the next caller.
  • Can you quickly tell me what happened?
  • How many casualties are there?
  • Where is the patient now?

Have they been moved from scene (quite common with young children).

Incident specific mechanism of injury questions
  • How far have they fallen?
  • What surface has the patient fallen on
  • Are they trapped (physically or relatively)
  • How fast were they going?
• What has the vehicle hit?
• Was the pedestrian thrown through the air?
• How far is the pedestrian/ejected occupant from the vehicle
• Has the patient gone under the vehicle?
• Has the pedestrian caused any damage to the car – in the windscreen intact?
• Is the shooting/stabbing victim’s assailant still on scene?
• How were they burnt / scalded?

Patient condition questions
• Is the patient awake – are they moving?
• Is the patient breathing normally? Is it noisy?
• Is the patient talking?
• If they are talking - do they make sense?
• Is there much bleeding?
• Does the patient know where they are?
• Is the patient still where the impact/injury occurred or have they moved?
• Does the patient obey commands – ask the caller to get the patient to squeeze their hand, touch their nose or similar
• Are there any obvious injuries?
• Has the patient moved all four limbs?
• Has the motorcyclist removed his crash helmet?
• Where in the body has the victim been shot /stabbed?
• Is the shooting/stabbing victim standing up or lying down?
• How much of the body has been burnt (nearly always overestimated by the caller)
• Where are the burns?

When interrogating callers, consideration should be given to the fact that they may be distressed, confused, angry or frightened. Reassurance must be given that help is on the way and that further questions will not delay this. The interrogation style will need to be adapted to be the most appropriate for each occasion.

If a 999 caller happens to have medical or first aid training, the questioning style should be adapted appropriately – ask about GCS, signs of shock, respiratory function for example.