

Helicopter Crew Course – a paramedic's perspective

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The UK HEMS Helicopter Crew Course (HCC) medical module, run by London's Air Ambulance, is aimed at aircrew paramedics and doctors wishing to enhance their knowledge and skills in pre-hospital emergency medical and trauma care. This review of the course, from a paramedic's perspective, looks at course content, delivery, experience and educational value.

Background

Air ambulance operations are becoming increasingly common in the UK, often using the doctor-paramedic model.

Paramedics and doctors working as flight crew often look after seriously unwell or injured patients and may have to perform complex interventions, including emergency anaesthesia, in the pre-hospital environment.

Scene assessment and safety, crew resource management, clinical interventions and on-scene decision making are key skills required by air ambulance crew members and training is needed in these areas. This is often undertaken locally but there have been calls for specialist, regional training.

The course

The HCC is rapidly becoming a prerequisite for paramedics wishing to undertake secondments or careers with UK air ambulance services. Having run since 2005, is gaining national and international recognition.

Clinical governance is being integrated and standardised across all air ambulances in London and the South East, with many other UK air ambulance services adopting similar clinical governance systems. Aircrew training therefore needs to be structured to allow flight paramedics and doctors to work within their clinical governance frameworks.

The HCC is a seven-day course, aimed at doctors and paramedics who possess a degree of pre-hospital knowledge and skills who are actively



Figure 1. Skills stations include splintage and patient packaging

involved, or about to be involved, in air ambulance operations.

The HCC medical module is run by pre-hospital care consultants and flight paramedics from London's Air Ambulance. It is based at the Royal London Hospital in Whitechapel, London, and involves training at the hospital's helipad.

It runs for seven consecutive days and consists of lectures, practical teaching and clinical scenarios involving moulage. Assessment is described below.

The course costs £1,000 and candidates have to arrange accommodation in London. There are usually 12–15 candidates per course. There is an excellent social element, with participants socializing in the evenings and a dinner.

Preparation

The course is mentally and physically challenging. A sound theoretical base is vital to allow candidates to focus on practical training in a challenging environment.

Before the course, candidates are given access to the HCC course website, which contains a plethora of study information, including published research articles, equipment manuals and standard operation procedures.

Candidates are strongly urged to spend plenty of time before the course making sure their theoretical knowledge is sound. This pre-course reading is one of the most important elements influencing how candidates will progress during the HCC.

Lectures

Lectures are usually given in the mornings and are delivered by paramedics and doctors, depending on the subject area.

Topics include pre-hospital anaesthesia, neurotrauma, dispatch, handling and packaging, cardiac arrest, major haemorrhage and major incidents. Lectures are given by leading experts in the field of pre-hospital care, many of whom have experience in dealing with major incidents such as the London bombings.

The course introduces subject areas in a variety of ways, always incorporating real-life case discussions, highlighting their relevance to clinical practice. Lectures are usually interactive with discussion and questioning encouraged.

An emphasis is put on removing cultural and hierarchical barriers. The lecturers are exceptionally good at delivering a level of learning appropriate for all candidates, doctors and paramedics alike. None of the paramedics on the course have felt intimidated or afraid of asking questions in front of their medical colleagues.

Skill stations

Specific training is given on core skills required in pre-hospital practice. These include pre-hospital anaesthesia and rapid sequence intubation, difficult airway management, pre-hospital haemorrhage control, splintage, patient packaging, maxillo-facial haemorrhage and facial packing. Skills stations are taught in small groups with ample time allowed for participants to become familiar with specialist pieces of equipment.

Doctors and paramedics are encouraged to



Figure 2. Preparing a standardised kit dump for a pre-hospital anaesthesia



Figure 3. Scenario teaching on the roof of the Royal London Hospital

adopt their usual roles and become proficient with equipment required to fulfil these.

Paramedics practise setting up a standardised kit dump for pre-hospital anaesthesia and working with their doctor colleagues to complete the procedure in safe manner. This includes drug preparation, dose calculations and completing a formal checklist.

Scenario based-training

Clinical scenarios are undertaken daily on the HCC. All scenarios are extremely realistic and are based on missions undertaken by the London Air Ambulance and regional air ambulance services.

The scenarios are conducted at the helipad on the roof of the Royal London Hospital, exposing candidates to the elements, often placing them in confined, dark, dirty spaces. Candidates can, at times, find themselves working outside their usual comfort zones and are challenged professionally and personally.

Using low-fidelity mannequins, the faculty is able to construct high-fidelity, realistic scenarios to challenge all aspects of clinical knowledge and crew resource management. The scenarios are intense and realistic, with large numbers of extras playing the roles of ambulance, police and fire crew, as well as emotional relatives and bystanders, which makes scenes very realistic.

Throughout the course these extras, comprised of HEMS team members, London ambulance service paramedics, medical students and charity staff, dress in their respective attire and adopt characters with exceptional realism and enthusiasm. Managing 'grieving' parents, 'drunken' bystanders



Figure 4. Scenarios are exceptionally realistic, even though low-fidelity simulation are used

or 'inquiring' police officers adds to moulage realism. The 'blood', 'faeces' and 'vomit' produced by the mannequins are so convincing that, at times, candidates forget the scenario is not real.

The majority of the course is scenario based, with candidates taking turns to fulfil different roles. The small number of candidates per group means there is a high rate of candidate participation. While partaking in scenarios may initially seem daunting, candidates rapidly become accustomed to taking an active role in the simulation. Participants who are not part of the attending clinical team are still heavily involved in scenario debriefing, feedback and constantly learning from other candidates' shortcomings and accomplishments.

Everyone involved in the scenario is encouraged to have a voice and crew resource management is an important part of the course. This approach breaks down communication barriers and brings optimum performance out of multidisciplinary teams.

Course assessment

The small number of course candidates allows for continuous feedback and mentoring throughout the course. If there are theoretical or practical areas that a participant does not understand, these can be addressed well before the final assessment.

Formal assessments occur on the last day of the course and consist of a short answer paper, a viva and an assessed moulage.

The written short answer paper lasts an hour

and a half and covers all aspects of the course. Paramedics may find this more challenging than doctors and often score less than them. However, if paramedic candidates have paid attention to the pre-reading material and lectures, the paper is not above their knowledge base.

Following the written paper, candidates will undertake an assessed 30-minute scenario. Candidates are placed with an active member of the London HEMS team to undertake assessment and treatment of a pre-hospital HEMS patient in a moulage. Paramedics are paired with a doctor and are expected to fulfil the role on a competent aircrew paramedic. The doctor is helpful but will not conduct or lead the scenario without input from the paramedic. This is an opportunity to demonstrate knowledge and skills acquired on the course.

The final assessment element is the viva, which lasts 30 minutes. Candidates are expected to have a thorough knowledge of clinical protocols and equipment used in the pre-hospital arena and be quick and precise with drug decisions and dosages. Candidates must also be able to justify decisions made in the pre-hospital field around triage and treatment, based on current research.

Impression of the course

Jemma Varela, a coauthor of this paper, writes:

Overall, the HCC was an excellent, value for money, all-round course that was invaluable to my pre-hospital air ambulance practice. Working in small groups with paramedic colleagues and doctors was enjoyable, educational and challenging.

Both my theoretical and practical knowledge improved significantly as a result of the course and I would thoroughly recommend the HCC to any aircrew paramedics.

- For more information on the HCC course, visit www.uk-hems.co.uk/Helicopter-Crew-Course
- For information on London's Air Ambulance, visit www.londonsairambulance.com