



Bulletin: Spring 2025 Training and careers  
**Society for Education in Anaesthesia (SEAK)**  
 Teaching cardiopulmonary resuscitation skills to medical students

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**Dr Viola Mendonca and Dr Emma Smith look at the effectiveness of medical students in recognising cardiac arrest, initiating chest compressions, and delivering defibrillation.**

The annual incidence of in-hospital cardiac arrest is 1 to 1.5 per 1,000 hospital admissions, and return of spontaneous circulation is achieved in 53% of those who are treated by a hospital's resuscitation team.

The hospital resuscitation team must, at a minimum, be able to perform basic airway interventions, including the use of a supraglottic airway in adults, intravenous cannulation, intraosseous access, defibrillation, and drug administration. They also should be able to provide immediate post-resuscitation care. In some hospitals, the cardiac-arrest team may not include an anaesthetist, but advanced airway skills such as tracheal intubation should be accessible when needed.

**Limitations of current training**

At undergraduate level, medical students receive basic life-support (BLS) and intermediate life-support training in a classroom format. However, soon after graduation as a foundation year doctor, they are expected to actively participate in a multidisciplinary resuscitation team to provide in-hospital advanced life support. Evidence has shown that factual knowledge of BLS is less satisfactory among medical students in the UK, and that 81% of 3,732 students [would like more training](#). There's a feeling of apprehension and being underprepared for involvement in real cardiac-arrest situations due to limited practical experience of working in a multidisciplinary team.

**Role of simulation**

The use of simulation has been shown to lead to improvements in both knowledge and confidence in procedural skills. Simulation is a useful tool for teaching topics such as teamwork and communication. High-fidelity simulation training is superior in the implementation of high-quality chest compressions in terms of depth and compression fraction.

However, the challenge is to formulate a multidisciplinary team that involves resident doctors from various specialties, healthcare assistants and ward nurses and to ensure that they all trained together as a team to mimic the real-life clinical situation. In addition, the reality of cardiopulmonary resuscitation (CPR) is that it can be more frantic and less organised than that in simulation, as well as more brutal than expected – for example the breaking of ribs during chest compressions.

In-situ simulation provides additional benefits such as the team's familiarising themselves with the environment they will be working in, the specific equipment they will be using and team members they will be working with. Familiarity with the location of cardiac-arrest equipment, familiarity with the type of cardiac-arrest trolley, grab bags and testing of systems (such as putting out a cardiac-arrest call) can prove to be hugely beneficial.

**Advances in CPR training**

As a profession, we often seek the experience of our peers, and it has been shown that near-peer trained medical students developed a higher level of self-efficacy than expert-trained students. A study looking at near-peer's sharing their real-life experiences of performing CPR with first-year medical students demonstrated enhanced student motivation to learn, so this could be considered as an [addition to CPR training](#).

As technology advances, there are new ways to implement CPR training for medical students. Virtual reality has recently been developed for BLS training aimed at medical students which will incorporate realtime feedback and simulate realistic scenarios. This also increases accessibility, creates a sense of urgency, and enhances learner engagement.

While it's agreed that regular revisiting of CPR training would aid in retention of knowledge and skills, it's important to look at other resources available to provide this training to medical students. As there has been a shift to the medical curriculum being delivered in a clinical setting, it makes sense to apply this to CPR training as well.

We are in the process of developing a programme to provide final-year medical students with a half-day attachment to a resuscitation practitioner during their assistantship block. This initiative supports the GMC's guidance in *Outcomes for Graduates*, with the assistantship block being a vital bridge between medical school and the start of FY1 training, particularly regarding diagnosing and managing acute medical emergencies, escalating appropriately, and providing immediate life support and cardiopulmonary resuscitation.

The programme will allow students to attend medical emergencies and actively participate within the cardiac-arrest team, while being supervised and supported by a resuscitation practitioner who will be able to assess dynamics of the team and what level of involvement is appropriate. This reduces the risk of student's acting beyond their level of competence or putting patient safety at risk. A key component of this attachment will be an opportunity for debrief, which is an essential but often underutilised element of clinical practice.

Debriefs provide a crucial opportunity for discussion and reflection, particularly following emotionally challenging occurrences. It's also a learning opportunity during which best practices and guidelines can be reinforced.

Embedding this hands-on experience at a critical stage of transition, after final exams and just before starting clinical practice, provides students with the exposure to managing emergencies with a reality that high-fidelity simulation cannot achieve.

Working alongside resuscitation practitioners, who are both experts in resuscitation and respected educators, students will benefit from a transition into medical practice that seeks to turn the challenges of early exposure to high-pressure medical scenarios into positive, processable learning opportunities.

By fostering resilience and confidence, we aim to better prepare students for the realities of their medical careers and contribute to the development of skilled and better prepared newly qualified doctors.