Sports doctors' resuscitation skills under examination: do they take it seriously?

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Abstract

As 64% of sports medicine doctors were unable to show proficiency at basic life support and assessment and management of a seriously injured patient with a potential spinal injury in the last two examinations for a University of Bath diploma in sports and exercise medicine, it was decided that a reminder is required of the importance of acquiring, at the very least, some basic resuscitation skills. An analysis and comment on the results from the first aid component of the examination is also presented.

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The examination for the University of Bath diploma in sports and exercise medicine has four components, which represent the final stage of assessment for the diploma. Each component lasts 30 minutes and consists of an examination of resuscitation skills (first aid component), a clinical long case, a series of clinical short cases, and a viva.

The first aid component comprises a demonstration of proficiency at basic life support (BLS) on a mannequin and a rapid airway, breathing, circulation, and neurological (ABCD) assessment of a seriously injured patient with a potential spinal injury, using a simulated live casualty scenario; finally the patient has to be safely secured to a long spinal board with the assistance of three lay bystanders.

If proficiency in these skills is shown, the candidate passes the first aid component. The candidate is then further examined as time allows, within the 30 minutes allocated, in the practical management of a simulated adult cardiac arrest (initially ventricular fibrillation) and advanced airway management (bag-valve mask ventilation and intubation) using mannequins.

The examiners are formally accredited instructors in Advanced Trauma Life Support (ATLS), Pre-hospital Trauma Life Support (PHTLS), and Advanced Life Support (ALS) as dictated by the American College of Surgeons, the National Association of Emergency Medical Technicians, and the UK Resuscitation Council. The candidate's proficiency in all aspects of the first aid component is measured against the currently accepted standards set by these bodies.[1–3] The standard required to show proficiency at a task is equivalent therefore to that required of a candidate completing the same task on an ATLS, PHTLS, or ALS course.

Failure to show proficiency at either BLS or the simulated live casualty scenario constitutes an outright failure of the whole examination.

Table 1 Basic life support

Key point.	*Number failing key point.*	*Percentage failing key point.*
SAFE approach	7/25	28
Open airway	6/25	24
Check breathing	7/25	28
Check circulation/signs of life	6/25	24
Adequate CPR (ventilations & cardiac compressions)	11/25	44

SAFE, Shout for assistance, approach with care, free from danger, evaluate casualty; CPR, cardiopulmonary resuscitation.

Table 2 Simulated live casualty scenario

Key point.	*Number failing key point.*	*Percentage failing key point.*
SAFE approach	8/25	32
ABCD assessment	15/25	60
Immobilisation of spine throughout	16/25	64
Long spinal board application	16/25	64

SAFE, Shout for assistance, approach with care, free from danger, evaluate casualty; ABCD, airway, breathing, circulation, neurological.

Table 3 Simulated cardiac arrest (initially ventricular fibrillation)

Key point.	*Number failing key point.*	*Percentage failing key point.*
Proper & safe use of defibrillator	4/9	44
Initiation & maintenance of BLS	4/9	44
Knowledge of current VF algorhithm	1/9	11

BLS, Basic life support; VF, ventricular fibrillation.

Methods and results

A total of 25 candidates were examined at the last two examinations for the University of Bath diploma in sports and exercise medicine. All 25 were examined in BLS and the simulated live casualty scenario. Nine (36%) showed proficiency in these skills and were therefore further examined in a simulated cardiac arrest: five were successful, and four of the five had sufficient remaining time to show proficiency in advanced airway management and all four were successful. Candidates had to show proficiency in several key points in order to pass the task being examined. Tables 1–3 show the results of some key points selected from the list of key points for each task being examined, failure of which suggests the candidate is ineffectual and/or a danger to themselves, the patient, or bystanders.

Discussion

The importance of opening an airway, providing oxygenation, and a cardiac output for patients who lack one or all of these elements is not in dispute. Basic and advanced resuscitation techniques are therefore used to maximise

the flow of oxygenated blood to the brain and vital organs of compromised trauma and non-trauma patients. Skills and techniques available to minimise further patient deterioration/injury include the ability to perform rapidly a simple ABCD assessment and thus identify patients who require rapid transport to hospital for definitive treatment (time critical patients), spinal immobilisation, and defibrillation. These techniques and treatment guidelines can be learned from the established resuscitation training courses.[1–3]

Resuscitation skills of doctors have been shown to be poor.[4–8] These findings correlate well with our examination experience and the failure rate of the first aid component in the examination described.

The results of our analysis show that 64% of the doctors examined, despite previous knowledge of what was to be examined, were incapable of performing BLS and/or a rapid ABCD assessment of a seriously injured patient with a potential spinal injury and then putting that patient on to a spinal board. Failure was due to one or more unacceptable errors in each case. Nearly a quarter (24%) were unable to open an airway using basic techniques, nearly two thirds (60%) were unable to/did not perform a rapid ABCD assessment of the seriously injured patient with a potential spinal injury, thereby unnecessarily increasing scene time, 64% were incapable of immobilising the spine, and similarly 64% were unable to safely and effectively put the casualty on to the long spinal board.

At the beginning of the BLS and live casualty scenarios, candidates were expected to show an understanding of the need for scene safety. An accepted strategy is the SAFE approach, but others amounting to the same would be accepted. An initial shout/call for extra assistance, specialist or otherwise, is represented by S. This is advised before approaching with care (A), freeing from danger (F), and finally evaluating the casualty (E). Scene safety was not addressed in any form by nearly one third of candidates in the live casualty scenario despite emphasis at the initiation of the scenario of continuing scene danger—for example, fire, falling rocks, or an incoming tide.

All casualties in the scenarios were in the supine position, semiconscious, and with plenty of surrounding space. It is our view that, if the scenarios had been a closer reflection of reality—that is, the casualty being unconscious, in the prone position, wearing a helmet, or with limited space—then the failure rate would have exceeded that observed.

Ventricular fibrillation is a treatable cardiac arrest rhythm, and the management of such cases should be within the remit of all emergency care doctors. Only five of the nine candidates who were examined in the simulated cardiac arrest scenario were able to show this proficiency despite most (8/9) being aware of the current ventricular fibrillation algorithm. Four of these five candidates had sufficient time to show proficiency at advanced airway management and all were successful.

It was evident which candidates had taken resuscitation training and skills maintenance seriously and those who had not. This raises the question of whether the doctors concerned realise that, if called on to perform such techniques in their capacity as sports doctors, they have a professional obligation to be competent and up to date. Our experience suggests that doctors dislike practising basic resuscitation and other skills, perform poorly with mannequins and in real resuscitations, and often make such comments as "if it was for real I would do it properly".

Common sense suggests that appropriate training and maintenance of skills is a prerequisite to any form of employment in which these skills may be required. The General Medical Council in its *Maintaining good medical practice* publication is quite clear that a doctor has a responsibility to his/her patient and must "be professionally competent, perform consistently well, do patients no further harm and be an effective team player".[9] In addition, advice from the Medical Defence Union states that there is no place for a "token" doctor at a sports event, and the sports doctor at events should have the "appropriate skills, equipment and expertise in such areas as cardio-pulmonary resuscitation, airway maintenance and spinal fracture immobilisation".[10]

CONCLUSION

It is essential that all sports doctors are trained and competent in resuscitation skills and the management of potential spinal injury. Sports doctors have a professional responsibility to maintain these standards and should undergo regular retraining and reassessment. Furthermore, British sport medicine organisations could consider according priority status to training in resuscitation skills and emergency care as part of continuing professional development programmes.

We would recommend that all doctors, especially those who have responsibility for sports events or those undertaking examinations in which proficiency at emergency care is mandatory, take it seriously and undertake appropriate training.

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Take home message
The resuscitation and emergency care skills of doctors are often inadequate. This is no longer acceptable. It is a professional responsibility to obtain appropriate training and maintain skills.