Cardiopulmonary resuscitation. Paper 1: a survey of undergraduate training in UK medical schools

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SUMMARY

This paper presents the results of a UK national survey of Basic Life Support (BLS) and Advanced Cardiac Life Support (ACLS) training for undergraduate medical students. In all responding medical schools, undergraduates are taught BLS at least once during their course but the assessment and refresher aspects of BLS training are not uniformly covered. There are inconsistencies in ACLS teaching, with some schools providing formal courses, some teaching specific techniques and others providing no ACLS teaching. Most interestingly, of those completing the questionnaire, only 52% considered present undergraduate training adequate to enable junior house officers to provide an effective resuscitation service. We recommend that all aspects of BLS and ACLS training for medical undergraduates be improved and standardized throughout the UK.

Key words: ACLS, BLS, medical students, resuscitation, training

INTRODUCTION AND METHODS

Undergraduate medical students, in common with preregistration house officers,1–3 MRCP candidates,4 consultants5 and nursing staff,6 have repeatedly been shown to be poor providers of both BLS and ACLS when tested in resuscitation scenarios. Skills in BLS and ACLS depend, to a large extent, on the quality of training and frequency of retraining7 but this has been shown to be inadequate and irregular.8 Improved training and organization of cardiopulmonary resuscitation (CPR) teaching is facilitated by the appointment of resuscitation training officers.7 It was shown some years ago that resuscitation training in UK medical schools was poor and inferior to that provided by North American medical schools.9

A postal survey was undertaken of every clinical medical school in the UK to assess the amount of cardiac resuscitation training provided in undergraduate medical schools at the present time. The questionnaire was sent to the Dean of each clinical medical school in the UK who was asked to pass it on to the person whom they considered responsible for organizing training in CPR for medical undergraduates. A copy of the questionnaire is shown in Figure 1.

RESULTS

Twenty-three valid replies to the 28 surveys we sent out were received, giving a response rate of 82%. The questionnaires were answered by the Dean themselves (2/23, 9%), consultants, professors and senior lecturers (16/23, 70%), resuscitation training officers (3/23, 13%) and others (2/23, 9%). The

<table>
<thead>
<tr>
<th>Topic</th>
<th>% of responding UK medical schools</th>
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<tbody>
<tr>
<td>Formal Basic Life Support Teaching</td>
<td>100 (23/23)</td>
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<tr>
<td>Formal Assessment of BLS</td>
<td>83 (19/23)</td>
</tr>
<tr>
<td>Formal BLS Refresher Course</td>
<td>57 (13/23)</td>
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<tr>
<td>Formal Advanced Cardiac Life Support Course</td>
<td>39 (9/23)</td>
</tr>
<tr>
<td>ACLS Techniques Taught (Not ACLS Course)</td>
<td>87 (20/23)</td>
</tr>
<tr>
<td>Adequate training for undergraduate medical students to enable them to provide an effective resuscitation service as junior house officers?</td>
<td>52 (12/23)</td>
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Table 1. Results of survey: topics taught during medical courses

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main results are presented in Table 1. Schools were considered to teach ACLS techniques if they taught at least one of the following techniques: defibrillation, endotracheal intubation, central venous cannulation or emergency cardiac drug use. Table 2 details the proportion that different specialties are reported to contribute to the teaching of resuscitation to medical undergraduates.

**DISCUSSION**

All the responding medical schools gave formal BLS training at least once during the medical course. BLS teaching tended to be concentrated in the final year of the course, although a significant amount of teaching is also done in the first preclinical year and in the first clinical year of the course. Most medical schools formally assessed students’ ability to perform competent BLS, but a much smaller proportion of schools provided a formal BLS refresher course although it has been shown that refresher training is essential for the retention of BLS skills and to maintain competency in the technique.10 A total of 87% of medical schools train their students in various ACLS techniques, the most common being defibrillation and endotracheal
Table 2. Proportion that specialties contribute to teaching of resuscitation

<table>
<thead>
<tr>
<th>Specialty</th>
<th>Contribution to teaching (%)</th>
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<tbody>
<tr>
<td>Anaesthesia</td>
<td>47</td>
</tr>
<tr>
<td>Accident and emergency medicine</td>
<td>25</td>
</tr>
<tr>
<td>General medicine/cardiology</td>
<td>17</td>
</tr>
<tr>
<td>Resuscitation training officers</td>
<td>11</td>
</tr>
</tbody>
</table>

intubation. Of these schools, 45% (9/20) provide a formal ACLS Course for their students. Of the three schools that do not teach any ACLS techniques formally, one is planning to introduce such teaching and two are not. Of the 14 schools that do not provide a formal ACLS Course, one has plans to start a course, nine have no such plans and four schools did not state their intentions.

ACLS teaching is an excellent learning modality for all medical and paramedical personnel involved in CPR, as well as emphasizing the important concept of effective team work. Given that most medical schools already teach some ACLS techniques to their students, it would be preferable to convert this unstructured teaching into formal ACLS Courses.

Those who completed the questionnaires were also asked if, in their opinion, 'undergraduate medical students were taught enough resuscitation skills to enable them to provide an effective resuscitation service as junior house officers?' Not surprisingly, only 52% answered 'Yes', with 35% answering 'No' and 23% declining to comment. These statistics in themselves illustrate the poor standard of training in cardiac life support that medical students receive.

CONCLUSIONS

In this study we have demonstrated a wide variety in the standard and amount of resuscitation training for undergraduate medical students in the UK, despite the recommendations of the Royal College of Physicians of London several years ago.11 It is well known that improved training leads to an improvement in the standard of resuscitation attempts along with improved chances of survival for the patient.12

It is imperative that both BLS and ACLS training for undergraduate medical students is improved, formalized and standardized throughout all UK medical schools.

ACKNOWLEDGEMENTS

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REFERENCES