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Education

PERCEPTIONS OF BASIC, ADVANCED, AND PEDIATRIC LIFE SUPPORT TRAINING IN A UNITED STATES MEDICAL SCHOOL

Malford Tyson Pillow, MD, MED,*† Donald Stader, MD,‡ Matthew Nguyen, MD,§ Dazhe Cao, MD,‡ Robert McArthur, MD,|| and Shkelzen Hoxhaj, MD, MPH, MBA*

*Section of Emergency Medicine, †Simulation Program, Baylor College of Medicine, Houston, Texas, ‡Department of Emergency Medicine, Carolinas Medical Center, Charlotte, North Carolina, §Department of Emergency Medicine, New York Presbyterian, New York, New York, and ||Department of Emergency Medicine, Beth Israel Deaconess, New York, New York

Reprint Address: Malford Tyson Pillow, MD, MED, Section of Emergency Medicine, Baylor College of Medicine, 1504 Taub Loop, Houston, TX 77030

□ **Abstract—Background: Basic Life Support (BLS), Advanced Cardiac Life Support (ACLS), and Pediatric Advanced Life Support (PALS) are integral parts of emergency resuscitative care. Although this training is usually reserved for residents, introducing the training in the medical student curriculum may enhance acquisition and retention of these skills. Objectives: We developed a survey to characterize the perceptions and needs of graduating medical students regarding BLS, ACLS, and PALS training. Methods: This was a study of graduating 4th-year medical students at a U.S. medical school. The students were surveyed prior to participating in an ACLS course in March of their final year. Results: Of 152 students, 109 (71.7%) completed the survey; 48.6% of students entered medical school without any prior training and 47.7% started clinics without training; 83.4% of students reported witnessing an average of 3.0 in-hospital cardiac arrests during training (range of 0–20). Overall, students rated their preparedness 2.0 (SD 1.0) for adult resuscitations and 1.7 (SD 0.9) for pediatric resuscitations on a 1–5 Likert scale, with 1 being unprepared. A total of 36.8% of students avoided participating in resuscitations due to lack of training; 98.2%, 91.7%, and 64.2% of students believe that BLS, ACLS, and PALS, respectively, should be included in the medical student curriculum. Conclusions: As per previous studies that have examined this topic, students feel unprepared to respond to cardiac arrests and resuscitations. They feel that training is needed in their curriculum and would possibly enhance perceived comfort levels and willingness to participate in resuscitations.** © 2014 Elsevier Inc.

□ **Keywords—basic life support; advanced cardiac life support; pediatric advanced life support; medical students**

INTRODUCTION

Since its formal endorsement in 1963 by the American Heart Association, cardiopulmonary resuscitation (CPR), and its later iterations, Basic Life Support (BLS), Advanced Cardiac Life Support (ACLS), and Pediatric Advance Life Support (PALS) have been foundations in the management of sudden cardiac arrest (SCA) and sudden cardiac death (1). Although the overall outcomes in SCA are poor, there is strong evidence to suggest that survival rates correlate with early application of both high-quality CPR and electrical cardioversion (2).

Also illustrating the importance of these guidelines is the requirement of many U.S. facilities for BLS, ACLS, and PALS certification in house staff and faculty to maintain privileges. Multiple studies, primarily done in Europe and New Zealand, have documented the poor quality of life support skills among new interns/physicians (3–12). However, these skills are not a regular part of the clinical curriculum for all U.S. medical students. Knowledge of CPR may lead to earlier mastery of these skills as students transition to resident physicians. Because of this, some authors have called for life support

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training in both curriculum and assessment in medical schools (12–14). Integration of BLS and ACLS into the standard curriculum of medical students may serve to reduce delays in resuscitation, improve knowledge of resuscitation skills, and ultimately, improve patient outcomes in SCA.

The evidence regarding optimal training in the curriculum is limited (15,16). Furthermore, the evidence is largely limited to European and Canadian studies, whose medical training differs significantly from American medical training. The evidence that does exist suggests that medical students believe that resuscitation training should be a part of a standard medical student curriculum (3). The Accreditation Council for Graduate Medical Education requires that certain programs, like Emergency Medicine, include training on medical resuscitations, but no specific curriculum (17).

Objective

The goal of the survey was to characterize the perceptions and needs of graduating medical students regarding BLS, ACLS, and PALS training. Specifically, we assessed the timing of training during medical school, and the comfort and willingness of students to participate in resuscitations. In addition, we sought to understand the students' exposure to cardiac arrests and resuscitations during medical school to better guide the need for this training in the medical school curriculum.

METHODS

Design

The study was conducted at an American Medical Association and Association of American Medical Colleges-accredited U.S. medical school with an annual enrollment of 600–700 students. The study was a retrospective, survey-based study that enrolled graduating 4th-year medical students prior to the start of an ACLS course for 2 of 5 consecutive days in March of 2010. A paper survey was distributed by study investigators, who were available to answer and clarify questions on site.

Inclusion/Exclusion Criteria

Participants were 4th-year medical students at the aforementioned medical school in good academic standing and on track for graduation. Students who achieved instructor status and helped to teach the ACLS class were excluded from the study.

Primary and Secondary Outcomes

Information collected included participant's residency matched specialty, level of current and past training in BLS, ACLS, PALS, and the number of witnessed cardiac arrests inside and outside of the hospital. The primary outcome of the study was to assess the participant's perception of their preparedness in basic and advanced life support. The participant was asked to rate his/her comfort level as first responder to adult and pediatric patients on a 1–5 Likert scale, with 1 being unprepared. Participants were asked "yes" or "no" as to whether they perceived that they had avoided participation in cardiac arrest or "code blue" due to a perceived lack of life support training. Secondarily, participants were asked about their perception on the requirement of life support training in medical school and when their perceived ideal time for training would be.

RESULTS

Of the 182 students in the graduating class, 152 participated in the training class, with 109 (71.7%) completing the survey. This group consisted of 31 (28.4%) students planning to go into hospital-based specialties, 42 (38.5%) into ambulatory specialties, and 31 (28.4%) into surgical specialties (Figure 1). The largest individual groups were Pediatrics at 17 (15.6%), Emergency Medicine at 13 (11.9%), and Radiology at 9 (8.3%).

A total of 48.6% of students entered medical school without any prior BLS or ACLS training, and only one of those students sought training prior to starting clinics. By the end of the 4th year, 32 students (29.4%) still had no formal training prior to the ACLS class (Table 1). Specifically, regarding ACLS, only 3 students arrived at medical school with prior training, and no new students in this group pursued ACLS training prior to clinical rotations or the capstone class. In regard to PALS, no students had prior training (specific to pediatrics) or sought training during medical school.

A total of 83.4% of students reported witnessing an average of 3.0 in-hospital cardiac arrests during training (range of 0–20) (Table 2). We did not find any significant difference in the students with vs. without prior training

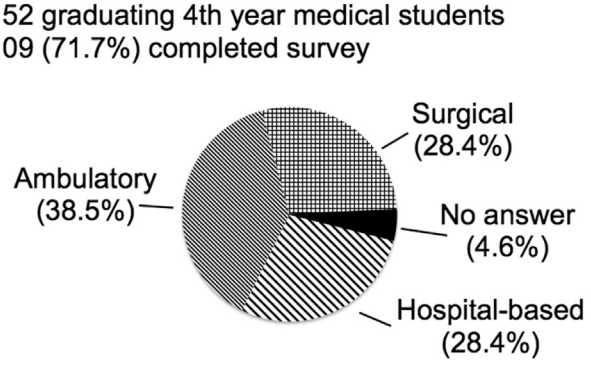

Figure 1. Demographics.

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