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**Center for Healthcare Education Studies
Fort Sam Houston, Texas 78234-6100**

Principal Investigator –CHES	COL Cynthia A. Abbott
Co Investigator-CHES	Dr. Vicki Byers
Medical Director – 232d Med. Bn	Dr. Robert DeLorenzo
SR Statistician – CHES	Dr. Mary Mays
Project Manager –CHES	Virginia Lester
Training Director – CHES	CPT Brian Sims
NCOIC – CHES	SFC(P) Raymond Porritt
Statistician – CHES	Don Saathoff
Research Assistant – CHES	Dianne Y. McCoy

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EXECUTIVE SUMMARY

Background

Combat medics are expected to render first responder aid during battle. In many cases, their skill is the difference between life or death. Their life-saving skills are based on complex, hierarchically organized, cognitive and psychomotor sets. Such skills are quickly lost if they are not learned well and repeatedly practiced. Initial training of combat medics must provide a knowledge and skill base sufficient to prepare them for immediate assignment as front-line medics, as well as for on-the-job training. Sustainment training of combat medics is critical, because the life-saving skills that form the core of what the combat medic must do in battle are not routinely used by medics in garrison. However, unit training time is limited and must be used efficiently and effectively. Commanders must give priority to the training of skills for which they are held accountable.

These facts create a unique set of problems for the Army Medical Department. For over 20 years, supervisors and commanders have expressed doubt about the effectiveness of initial and sustainment training of 91B10 combat medics. The proficiency of 91B10 combat medics has been tested many times (Blythe, et al., 1979; Latman and Wooley, 1980; Richardson, 1989; Skelton and McSwain, 1977; Training Evaluation Division, 1981; Zadinsky, 1997; Zautche, Lee, and Ethington, 1987). The results of these studies have consistently indicated that initial training of combat medics does not produce a combat medic proficient in core life-saving skills, that on-the-job training does not provide practice in core life-saving skills, that sustainment programs are not focused on life-saving skills, and that unit training lacks command support. The current study was designed to provide senior leadership with the information needed to increase the effectiveness of 91B10 training. Its goal was to provide a comprehensive evaluation of all the elements that define 91B10 proficiency training.

Design

Data were collected from large samples of military personnel who were systematically chosen to represent the Army's front-line medics, their trainers, and their supervisors. Information was collected from multiple perspectives and on more than one occasion to insure that it was reliable and convergent. Both subjective and objective data were collected from a variety of sources: demographics, self-evaluations, peer-evaluations, student evaluations, instructor evaluations, supervisor evaluations, opinion surveys, fact-finding surveys, standardized observations, aptitude tests, motivation tests, school grades, nationally standardized proficiency tests, locally developed proficiency tests, written proficiency tests, and hands-on proficiency tests. Testing was conducted using supplies, equipment, methods, and standards that were relevant to military operations and nationally recognized guidelines for emergency medical technician training.

Procedure

Phase I was an assessment of the current state of affairs in the field. Baseline readiness was obtained from testing of Combat medics from light infantry (Fort Lewis), mechanized infantry (Fort Carson), armor (Fort Hood), and airborne (Fort Bragg) installations were tested using both written and hands-on tests of life-saving skills. All medics tested in Phase I (n=347) were 91B10 skill level medics in pay grades E2 to E4. In addition, supervisors of 91B10 combat medics (n=255) were surveyed about the training and proficiency of their subordinates.

Phase II was an evaluation of Advanced Individual (AIT) combat medics. Students at Fort Sam Houston (127) were randomly selected for training in either a traditional or an experimental 91B10 course. Both courses were 10 weeks in duration and covered the same content. They differed only in the teaching strategies used to present the material. The experimental course emphasized adult learning principles, integrated classroom exercises and practical exercises.

Phase III was an assessment of sustainment training. Following Phases I and II of the study, Fort Hood began using a new sustainment-training program emphasizing core life-saving skills and hands-on proficiency. The other three installations continued to use traditional sustainment-training programs. Phase III testing was a re-evaluation of the three groups: (1) experienced combat medics who had been tested in Phase I (n=284 due to attrition), (2) new combat medics who had graduated from the traditional 91B10 course in Phase II (n=61), and (3) new combat medics who had graduated from the experimental 91B10 course in Phase II (n=66). For all three groups, Phase III testing took place six months after baseline testing. Three months later, both groups of new combat medics were tested again, nine months after their baseline testing. Phase III testing was identical to baseline testing, identical for all three groups, and identical at all four installations (Forts Bragg, Carson, Hood, and Lewis).

The final phase of the study, Phase IV, was a feasibility test of a method for measuring the effectiveness of unit training programs. A sample of 91B10 trainers were asked to use a standardized form to compute an individual and a unit Medical Field Readiness Index using individual proficiency test scores from hands-on tests of life-saving skills.

Recommendations

1. The adult learning model should be fully implemented in the 91B10 course.

Two elements of the results led to Recommendation 1. First, data from the after action report of the Phase II training officer, the staff observations of classroom and laboratory presentations, the instructor evaluations of the course, and the student evaluations of the course all indicated that there were key differences between the traditional and experimental 91B10 courses. Second, data from written and hands-on tests of medics in Phase III demonstrated that new medics who graduated from the experimental 91B10 course were significantly more proficient at core life-saving skills than those who graduated from the traditional 91B10 course. Additionally, new medics graduating from the experimental 91B10 course were more proficient than combat medics with substantially more experience. These two findings suggested that the experimental 91B10 course was more effective than the traditional 91B10 course and serves as a model for future 91B10 courses.

2. Instructors of 91B10 combat medics should have intensive training in teaching strategies that facilitate adult learning in both the classroom and laboratory.

Three elements of the results led to Recommendation 2. First, data from the staff observations of faculty presentations indicated that the adult learning model was more effectively implemented in the laboratory than in the classroom. Second, data from motivation tests indicated that both self-directed learning and school motivation significantly declined during Phase II for students in both the traditional and the experimental 91B10 courses. Third, neither self-directed learning nor school motivation predicted performance in either the traditional or the experimental 91B10 course. These data indicated that the adult learning model was not fully implemented in the experimental 91B10 course. Data suggested that faculty needed more training in how to incorporate the adult learning model into classroom teaching practices.

3. The standard for graduation from the 91B10 course should be hands-on proficiency with life-saving skills.

Two elements of the results led to Recommendation 3. First, the results of hands-on tests of core life-saving skills administered six months after baseline testing showed that new combat medics who were trained in an experimental 91B10 course were not only more proficient than new combat medics who had been trained in a traditional 91B10 course, but were also more proficient than substantially more experienced combat medics. Second, the results of hands-on tests of core life-saving skills administered nine months after baseline testing showed that new combat medics who were trained in the experimental 91B10 course continued to be more proficient than new combat medics who had been trained in the traditional 91B10 course.

Performance on the hands-on test of "assessing the casualty" was a good example of the results that led to Recommendation 3. Only 46% of experienced combat and 38% of new combat medics who were trained in the traditional 91B10 course (scored 70% or more) passed the test. In contrast, 65% of new combat medics who were trained in the experimental 91B10 course passed the test. Because the majority of new combat medics from the traditional 91B10 training failed the proficiency test, it was clear that the standard used in initial 91B10 training was too low to produce a fully proficient combat medic. Because experienced combat medics performed only slightly better than traditionally trained new combat medics, it was clear that unit training was not able to produce a fully proficient combat medic. That is, either initial 91B10 training did not provide experienced combat medics with the background needed to make good use of unit training or units could not provide sufficient training to bring life-saving skills up to standard. In either case, the need for higher standards in initial 91B10 training standards was apparent.

The performance of new combat medics who had been trained in the experimental 91B10 course was significantly better than that of their colleagues. Clearly, the experimental model's emphasis on hands-on proficiency throughout the training produced graduates who were more proficient - graduates who just a few months after graduation performed as though they had years of experience.

The results of proficiency testing nine months after baseline testing showed that both groups of new combat medics improved between the six month and nine month follow-up tests.

However, new combat medics who had been trained in the experimental 91B10 course were still performing at significantly higher levels than those who had been trained in the traditional 91B10 course. That is, both groups of medics were able to improve their performance with sustainment training, but those who had been trained in the traditional manner were not able to reach the same levels as those who had been trained with an emphasis on hands-on proficiency. These data showed the long-term value of having a good start.

In summary, these results suggested that the performance standards of the experimental 91B10 course were more effective than the traditional 91B10 course in producing proficient combat medics. Therefore, the experimental course standards should become the model for future 91B10 courses.

4. Installations should be given a standardized sustainment-training program focused on core life-saving skills.

Two elements of the results led to Recommendation 4. First, a comparison of the change in performance from baseline testing to six month testing of experienced combat medics demonstrated that an improvement in proficiency occurred on all four skills only at Fort Hood. Second, a comparison of the change in performance from six month testing to nine month testing of new combat medics demonstrated that consistent improvements in proficiency occurred only at Fort Hood. Between Phases I and II a new sustainment-training program was instituted at Fort Hood. The program focused on four core life-saving skills and emphasized hands-on proficiency. The results of proficiency testing demonstrated the effectiveness of having the program.

5. A Medical Field Readiness Index that holds commanders accountable for maintaining 91B10 combat medic proficiency should be implemented Army-wide.

Four elements of the results led to Recommendation 5. First, feedback from supervisors of combat medics, experienced combat medics, and new combat medics all agreed that combat medics did not routinely practice life-saving skills in the normal course of their day-to-day activities on the job. Thus, sustainment training was necessary. Second, they all agreed that training sessions dedicated to teaching life-saving skills were given regularly. Weekly or monthly training on these topics was the norm. Third, they all agreed that training resources (mannequins, videotapes, field exercises, etc.) were available and were used regularly to teach life-saving skills. Fourth, supervisors of combat medics indicated that their only major training barrier was a lack of command support.

Supervisors suggested that commanders needed to be accountable for medical readiness, just as they are accountable for the physical fitness of their soldiers. This study demonstrated clearly that it was feasible to conduct large-scale proficiency testing of medics. As a result a standardized method for computing a Medical Field Readiness Index was developed. This system for assessing and recording individual and unit medical readiness should be implemented Army-wide.

Appendix A

EXPERIMENTAL SUSTAINMENT PACKAGE

EXPERIMENTAL SUSTAINMENT TRAINING PACKAGE

This 36 page section is a very large file. It will be in the final report as Appendix T,
when published. POC Dianne.McCoy@cen.amedd.army.mil
or Patricia.Twist@cen.amedd.army.mil

Appendix B
(Page 195 in Final Report)

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