

AED Challenge!

by Linda Del Monte, training products manager



PERIODIC REFRESHER TRAINING IS AN important part of any automated external defibrillation (AED) program. In order to maintain skill levels most professional rescuers receive refresher training as often as every ninety days.

One of the problems faced by services with AED programs is that traditional, instructor-led refresher training has considerable cost including salaries for instructors, equipment, facilities, administration, scheduling and, in some cases, overtime pay for technicians. Managing the logistics can be a big job.

"Scheduling refresher defibrillation training is a big headache," says Paramedic Bruce Ansell, EMT-Defib Program Coordinator for the Bellevue (Washington) Fire Department. "We've got 135 people in ten different stations on three rotating shifts, some on vacation or emergency leave and some on assignment at any given time. It is nearly impossible to get an instructor to meet with all our EMTs four times a year."

Cost and logistical problems are caus-

ing some AED program managers to seek other training options. One of the options is computer based training (CBT).

Pros, cons and caveats

Trainers seem to agree that CBT can be a good solution for many training problems. Individuals learn at different rates; the computer allows for individualized instruction where each student can advance at a comfortable pace. Student schedules may not be conducive to group based instruction that requires all students to be at the same location at the same time; the computer is available 24 hours a day and at remote locations. Frequent and adequate practice may not be available during instructor-led training because of high instructor-to-student ratios and lack of time.

Computer based training has other advantages, too, such as immediate reinforcement or feedback, reduced costs, standardized training and documented performance. It can even be fun!

Disadvantages are that computer hard-

ware must be available and the program may require some degree of support and maintenance.

The caveat is this: The computer is just a delivery medium and not inherently better at teaching than an instructor or other medium such as print. The program must be well designed and the instructional objectives appropriate for the medium.

If the training software does not utilize proven instructional design methods or meaningful interaction and feedback, CBT will not be effective. Many training software programs available today are mere "electronic textbooks" and fail to follow good design principles.

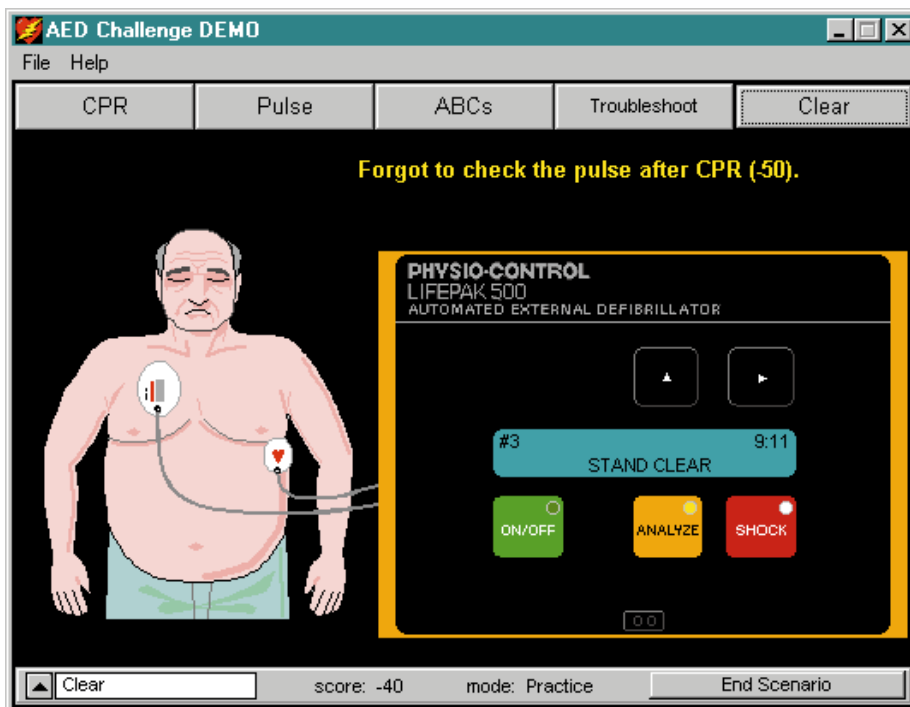
When choosing training software look for programs that provide frequent and helpful interactions and are simple to use.

The problem studied

Researchers in Seattle became interested in applying computer technology to the AED training problem several years ago. A group at the Center for the Evaluation of Emergency Medical Services (CEEMS) studied a software program that simulated cardiac arrest situations and provided online practice for defibrillator users.

Since a major concern about CBT is how effectively it transfers to real field performance the group planned a study to examine this question and others.

The purpose of the study was to determine if computer-based training can maintain the AED skills of EMS providers. The one-year prospective study compared an AED simulation software program (*AED Challenge*) with traditional instructor-led refresher training. Subjects were full-time professional EMT-D/firefighters trained in automated defibrillation. They were placed in one of three groups. Two groups were assigned to use the computer program for six months. The third group remained on the normal, instructor-led training regimen. Pre- and post-study skill levels were measured using a practical skills test.



The *AED Challenge*™ training tool simulates cardiac arrest scenarios and use of the LIFEPAK 500 AED. It provides practice for AED personnel who are just learning to use an AED and helps experienced AED users keep their skills sharp. The CBT program is a proven, carefully designed instructional tool.

Over the one-year study period, researchers observed no differences between the groups in performance scores. They observed satisfactory AED skill maintenance for experienced EMT-Ds using computer-assisted learning to replace two of four quarterly instructor-led skills review. The one-time cost of supplying the computer-assisted learning program resulted in a 50% reduction in costs.

Researchers concluded that computer-based training has cost and convenience advantages over instructor-based skill maintenance and is an acceptable alternative for refresher training.¹

The product

The AED Challenge training tool simulates cardiac arrest scenarios and use of the LIFEPAK® 500 AED. It provides practice for AED personnel who are just learning to use an AED and helps experienced AED users keep their skills sharp. A variety of scenarios are presented and students are able to actively rehearse their skills.

The interactive program gives users advice and detailed feedback, prints reports and documents testing and performance. It also adapts to local protocol. *AED Challenge* is not a replacement for initial hands-on training. Students need hands-on training when initially learning defibrillation.

Lieutenant Michael Uphus, EMS Field Supervisor for the Cincinnati (Ohio) Fire Division, has used *AED Challenge* since last year. "Our EMTs have more opportunities to practice defibrillation with this program than before and that really improves their clinical skills," he says. Uphus has observed a marked improvement in performance since installing the program in his department's fire stations and he says the "EMTs enjoy using the program because of its competitive

aspects." *AED Challenge* lets users compete for the highest score, which promotes practice. The program also keeps records for data management and certification purposes.

Ansell estimates a department the size of Bellevue's can save about \$25,000 over ten years by the yearly replacement of a couple of instructor-led reviews with *AED Challenge*. Other benefits of the computer software he identifies are that it makes AED training available 24 hours a day and makes his job easier. The program also helps personnel remember the defibrillation protocols. "Our EMTs think it's fun, too. Both experienced and new people like it."

Computer requirements

AED Challenge runs on IBM® PC or compatible 486 or Pentium® computers with Windows® 95, Windows 98 or NT, and 4 megabytes of RAM (8 MB recommended) and 2 megabytes of available hard drive storage space. It requires no CD-ROM drives, extra memory or complicated peripherals.

Conclusion

AED Challenge is a carefully designed CBT tool and one of the few whose effectiveness is documented. ■

For a free demo disk of AED Challenge call Medtronic Physio-Control at 800.442.1142, select option 8 and ask for part number 3012324, or download it free from our website at www.physiocontrol.com.

1. Jerin JM, Ansell BA, Larsen MP, Cummins RO. Automated external defibrillators: skill maintenance using computer-assisted learning. *Academic Emergency Medicine* 1998; 5(7):709-718.

AED Training and Educational Resource Materials from Medtronic Physio-Control

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AED Challenge an interactive computer training tool

Early Defibrillation 35mm slide program/script

LIFEPAK AED Trainer and accessories

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