Response to Effectiveness and Cost-Effectiveness of Public Access Automatic Defibrillator (AED) Programs

Winkle RA. *Clin Cardiol.* 2010;33:396–399.

To the Editor:

Winkle's review¹ regarding the effectiveness and cost-effectiveness of public-access automated external defibrillator (AED) programs concludes that the cost of such programs can range from \$1 million to \$10 million per quality-adjusted life year saved, asserts that this degree of expenditure is not consistent with the generally accepted expenditure of healthcare dollars, and suggests that placement of AEDs at high-visibility sites is "probably" good for overall public awareness of sudden cardiac death. Our experience in establishing and maintaining a community public-access AED program, based in county buildings, courthouses, recreation centers, libraries, nutrition dining sites for the elderly, and large public-transportation vehicles in a suburban community, provides anecdotal evidence about the costs and benefits of such a program.

Winkle's evaluation of the cost of public-access AED programs against generally accepted healthcare expenditures compares incongruent categories. In our county, the funds utilized to purchase the AEDs, distribute restocking supplies, and provide cardiopulmonary resuscitation (CPR) and AED training for employees at targeted sites were not allocated from traditional healthcare payment sources. These funds were a small portion of a penny sales tax enacted to assist with support of public-service functions within the county.

In <3 years, we have had 2 successful resuscitations as the result of placement of AEDs in county locations, as well as providing CPR/AED training to approximately 70% of employees serving in departments that interact with the public. The first incident occurred on a public-transportation bus, where the rescuer was a bus driver. The second incident occurred at a recreation center in front of a large crowd at a basketball game and involved cooperation between several parks department employees. In both instances, the individual was aged <60 years, was initially in ventricular fibrillation, and received 1 shock from an AED. Both patients were responsive, in sinus rhythm when emergency medical services arrived, and subsequently discharged from the hospital to a home environment.

The details of these incidents underscore the ability of a successful resuscitation in a public place to educate civilians. Winkle's conclusion that AEDs are "probably" good for improving public knowledge about sudden cardiac death minimizes the positive impact of these witnessed resuscitations. The population utilizing the public-transportation system typically lives within a tightly knit community of Hispanic migrants and African Americans of low socioeconomic status. Within 48 hours of the event on the bus, the details had spread

to the public-housing developments and were a topic of frequent conversation. At the recreation center, approximately 100 civilians witnessed the patient's collapse and subsequent cyanosis, the resuscitation efforts, and the patient's ability to answer questions at the time of emergency medical services' arrival. In both instances, the strength of the message to the individuals who observed the CPR efforts and use of the AED, as well as individuals who heard the details secondhand in the retelling of the story, far exceeds that of a typical public-service announcement. These real-life vignettes of AED successes are priceless and one significant benefit of community-access AED programs.

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Reference

1. Winkle RA. The effectiveness and cost-effectiveness of public-access defibrillation. *Clin Cardiol.* 2010;33:396–399.

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Authors Reply:

I appreciate the thoughtful comments of McGuire-Wolfe. Excellent public-access automated external defibrillator (AED) programs exist all over the world, and it sounds as if there is such a program in Pasco County. We did not mean to imply that the money to fund such programs comes from the traditional healthcare sources; however, the money must come from somewhere. Local communities often choose to fund public-health projects, and AED programs are an example of that. If cost-effectiveness is a factor in funding, then communities need to know if their money provides greater returns in an AED program as compared with programs such as hypertension awareness or drug-prevention education in teens. Unfortunately for AED therapy, all of the available cost-effectiveness data comes from models that make a lot of assumptions and could be grossly inaccurate. It sounds as if Pasco County would be an ideal location to track all of the actual costs of a public-access AED program, including the cost of the AEDs and their ongoing maintenance, training of personnel, and all of the administrative costs. Such real-world data of actual costs and number of lives saved would be very important to determine the cost-effectiveness of public-access defibrillation.

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