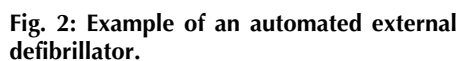
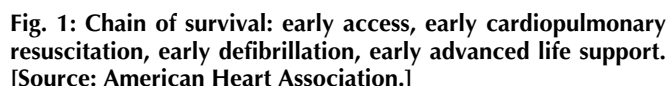


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History: Manufacturers of public access defibrillation equipment have been hurrying to provide a “fire extinguisher” type of defibrillator that is quick and easy to apply. This would accurately determine cardiac rhythm and deliver appropriate energy safely and effectively. The automated external de-

Problems: First, with the annual incidence of sudden cardiac arrest at 4 to 8 per 10 000 population,¹¹ many sites will have to be involved in the proposed multicentre trial, at great cost of equipment and training. In addition, the groundswell of support for this new technology may indeed prevent its objective study. Second, as a controlled medical act (in Ontario), defibrillation



requires medical delegation and overall supervision by a physician. Will the Colleges of Physicians and Surgeons demand that such physicians have their own qualifications to perform these acts and to delegate them? Third, who will ensure that these devices are used appropriately? Although apparently safe (the AED will only shock a shockable rhythm), can a lay responder be certain that the patient is pulseless? How can one be certain that there will be an efficient transfer of care to EMS personnel? Fourth, will such machines in widespread use be maintained properly? Is quality control possible when the AEDs are used in a "fire extinguisher" mode? Finally, what is the cost-effectiveness of training and maintaining skills of lay responders in the act of defibrillation when the frequency of use will be minimal?

Prospects: We believe that automated external defibrillation will eventually find a niche in places that do not have easy access for EMS providers. In such areas lay people could be trained to provide CPR and defibrillation if response times for EMS personnel are more than 15 minutes. In addition, selected high-risk patients for whom an implantable device is contraindicated or not available may benefit from having an AED at home, with their significant other or caregiver certified in its use. However, technology should not determine need. Controlled trials, if feasible, should serve to identify areas of potentially improved outcome and cost benefit for the use of automated defibrillators by the public.

Conclusion: Defibrillation by lay responders is on the horizon. It has the potential to increase survival from sudden cardiac arrest. We believe that to maximize effectiveness, it must be managed with appropriate medical control, be fully integrated with the community's EMS system and be subject to objective and rigorous evaluation.

Competing interests: None declared.

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Related Web sites

- Public Access Defibrillation League: www.padl.org
- Toronto Ambulance: www.city.toronto.on.ca/ems
- University of Toronto Emergency Medicine Divisions: www.utoronto.ca/emergmed

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