Portable Automated External Defibrillator.

Sudden cardiac arrest (SCA) results from any electrical disturbance that suddenly disrupts and stops the heart from beating. The current solutions, automated external defibrillators (AEDs), are few and far between in public buildings. People who find themselves needing to assist a victim of SCA first need to find nearby AEDs, a delay that can potentially be fatal on top of an already stressful, high risk, and new situation. To solve the problem, we have designed a more portable AED that can be placed in pockets or handbags. This device will operate as a regular AED, with a built-in algorithm to classify the monitored ECG signal when attaching the pads to the patients, an instruction page for CPR performance and the capacity for only a single shock, as this would allow for a much smaller battery (and overall device). Additional shocks past the first are shown to be much less effective when not administered by medical professionals. It is expected that such a device can significantly increase the survival rate for SCA patients in public environments (in other words, not medical facilities).

Figure 1. Current AEDs are placed at a fixed position and are hard to be carried around with people
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