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Letter to the Editor

Letter in response to: 'Building a lifesaving network: public access defibrillation across the challenging terrain of Crete'

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Dear Editor

We read with great interest the report by Darivianaki et al (2026) describing the implementation of the ZOE public-access defibrillation program across Crete[1]. Of particular interest is the authors' observation that, across the reported automated external defibrillator (AED) deployments, the citizens involved were aware of the devices' locations and bystander resuscitation had already been initiated while the emergency medical services (EMS) system was being activated for advanced cardiac arrest management. This finding demonstrates that effective community-based defibrillation programs require not only the installation of AEDs, but also public awareness of device locations and readiness to intervene prior to the arrival of professional medical personnel.

The study draws attention to a structural limitation inherent in most public-access defibrillation strategies. The simple presence of a wall-mounted AED does not guarantee it gets used, since public-access defibrillation also depends on the device being accessible at the moment of cardiac arrest and on bystanders actually being able to find and retrieve it quickly[2,3]. These challenges are certainly relevant in rural communities, where bystander defibrillation is generally less frequent than in urban areas[4]. This limitation

requires serious consideration because rural out-of-hospital cardiac arrest survival rates remain substantially lower than those in metropolitan areas[5].

Rural and remote settlements like Crete offer a clear example. Its dispersed settlements, mountainous terrain, and seasonal population swings can all limit how far even a well-organized fixed-device network reaches.

We are optimistic that rural AED systems will soon explore an additional approach: using dispatcher-activated drones to deliver AEDs. Instead of requiring a bystander to leave the patient and search for a fixed device, an AED-equipped drone can be dispatched to the suspected arrest location in parallel with EMS, community responders, and retrieval of any nearby registered AED. In this context, drones should be regarded not as substitutes for fixed AEDs or ambulances, but rather as an additional logistical pathway within an integrated rural response system. Interestingly, real-world evidence indicates that, under certain circumstances, drones can deliver AEDs before ambulances in a substantial proportion of eligible cases and can provide a clinically meaningful time advantage[6].

This potential must be weighed against practical constraints that are especially pronounced in rural and remote areas. In particular, adverse weather and complex topography can ground or reroute flights, beyond-visual-line-of-sight regulations still limit where drones can legally operate, and maintaining a fleet across a sparsely populated coverage area carries a real operational cost. These factors will certainly shape where and how such systems can realistically be deployed, and should be assessed alongside clinical outcomes.

However, AED arrival, although easily measurable, does not represent the endpoint for evaluating a drone-based AED delivery system. An important aspect of system evaluation is retrieval time, that is, the moment at which the AED is recovered and placed in a bystander's hands, ready for use. Research on human–drone interaction identifies landing, handover, and communication as frequent points of failure during this critical phase[7]. Recent qualitative evidence demonstrates that bystanders appreciate drone delivery but require explicit guidance from call handlers and ongoing reassurance during the retrieval and use process[8].

Building on this evidence, we argue that rural drone AED programs should incorporate a human-centered design from the outset. The dispatcher–bystander interface should be regarded as a core component of the intervention and evaluated through realistic simulations and prospective implementation studies. Outcome measures should include aspects such as dispatch activation, successful delivery, retrieval time, AED attachment, time to rhythm analysis and shock, CPR interruptions, user workload, protocol deviations, and neurologically favorable survival, rather than solely whether the drone arrived.

From our perspective, the ZOE program offers an excellent platform for demonstrating the feasibility of rural defibrillation networks. We propose that the next phase of development include experimental studies comparing fixed-site retrieval, drone delivery, and standard EMS response within a unified system. In the longer term development of AED drone-delivery systems, the objective should be to close the gap between device arrival and effective use, so that bystanders in challenging areas such as Crete can retrieve and operate the device with adequate guidance and without delay.

Conflicts of interest

The authors declare no conflicts of interest. The views expressed in this article are solely those of the authors and do not necessarily reflect those of their affiliated institutions. The authors received no funding for this work.

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