Cardiac arrest

A Hernández-Tejedor*, NV González, E Corral, A Benito, MI Vázquez, R Pinilla, SI Montero, F Torres, M Elizondo. SAMUR-Protección Civil, Madrid, Spain

Background Drone delivery of automated external defibrillators (AEDs) to out-of-hospital cardiac arrest (OHCA) is increasingly being investigated for early defibrillation. To obtain an overview of international status and feasibility, we performed a scoping review of the literature concerning drone-AED delivery.

Method Combining search strings of drone with OHCA OR drone-AED delivery, we performed a scoping review of the literature concerning drone-AED delivery. Included studies were either test-flights with drone-AED or virtual flight models calculating drone-AED coverage in different ways.

Results After duplicate removal, title/abstract screening, and full-text review, a total of 23/122 records were included. Included studies were either test-flights with drone-AED or virtual flight models calculating drone-AED coverage in different ways.

Fifteen studies (from Sweden, Canada, USA (Washington, Virginia, North Carolina, and Utah) France, Germany, Northern Ireland, South Korea, and Austria) concerned location and quantity of drone bases in a virtual drone-flight simulation model. All studies estimated an overall time gain to AED on scene compared with standard Emergency Medical Service (EMS) arrival, with varying proportions of OHCAs covered by drone-AED delivery prior to standard EMS.

Seven studies concerned simulation flights, 4 of these included the human-drone interaction. One study delivered AEDs to real-life suspected OHCA with a delivery success rate of 92%.

All these studies found drone-delivery of AEDs feasible.

Conclusion All 23 investigative studies found drone-delivery of AEDs to suspected OHCA feasible and with an overall estimated time gain compared with standard EMS. Only one study described drone-AED delivery to real-life suspected OHCA.

Conflict of interest None.

Funding Novo Nordisk Foundation.