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# Resuscitation

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## Letter to the Editor

# Drone delivery of AED's and personal protective equipment in the era of SARS-CoV-2



To the Editor,

Scquizzato and colleagues have recently described the fear of contracting SARS-CoV-2 as an obstacle to perform bystander cardiopulmonary resuscitation (CPR).<sup>1</sup> A case similar to the one reported has also occurred in our country.<sup>2</sup> The authors describe the current ERC guidelines that advise continuous chest compressions (CCC)-CPR and early defibrillation, as well as an only-look technique to assess the absence of signs of life to dispel bystanders' concern about CPR in the SARS-CoV-2 pandemic. It is currently not predictable what dynamics SARS-CoV-2 transmission will develop in the coming years, but prolonged or intermittent social distancing may be necessary until 2022.<sup>3</sup> A long-term strategy is required to maintain the current out-of-hospital-cardiac-arrest (OHCA) survival rate.

We believe that the development and introduction of novel techniques may help to limit human contact and encourage bystanders to start CPR on site as soon as possible. Studies have demonstrated the capability of drones to carry medical equipment<sup>4</sup> and personal protective equipment (PPE) like gloves and facemasks to the site of an emergency. Experimental studies involving drone delivered AED's have also proven that drones can reach an accident faster than the emergency medical service (EMS). Drones can provide first responders with CPR advice and may convey a sense of security through telemedical support. Claesson and colleagues recorded the time interval from dispatch to arrival of an AED in cases of OHCA in a suburban area of Stockholm, which is characterised by restricted airspace and excessive Emergency Medical Services (EMS) response times.<sup>4</sup> Drones were sent on 18 flights to locations where OHCA's within a 10-km radius from the fire station had historically occurred, with a median flight distance of 3.2 km. The median time from dispatch to arrival was 5:21 min (IQR, 3:03–8:33; shortest time, 1:15 min) for drones compared to 22:00 min (IQR, 17:48–29:00; shortest time, 5:00 min) for EMS ( $P < 0.001$ ). Bystanders reported that availability and use of the AED was perceived safe and feasible and conversation with the dispatcher via the drone was positive and helpful.<sup>5</sup>

Resuscitation councils stress the relevance of CCC-CPR without mouth-to-mouth ventilation and advise first responders to look for the absence of signs of life only, to reduce the fear of disease contraction. We further suggest the introduction of drones wherever may be indicated. Aside from providing AED and CPR advice to bystanders,

drones can deliver PPE and communicate safety instructions. Although this seems a logistical challenge, it can be a crucial part of the strategy to encourage, instruct and reassure bystanders to perform CPR even in times of epidemic.

## Conflicts of interest

None declared.

## Credit author statement

Michiel J van Veelen: Conceptualization, investigation, writing original draft Marc Kaufmann: Conceptualization, review & editing Hermann Bruggger: Supervision, review & editing Giacomo Strapazzon: Conceptualization, supervision, review & editing.

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