had an OR of 12.51 [11.12;14.08] and 3.68 [3.30;4.09], respectively. In a time-to-death analysis presented as incidence rate ratios, Mental disorders due to use of alcohol 1.85 [1.77;1.95], COPD and respiratory failure 2.58 [2.42;2.74], stroke 1.96 [1.82;2.11], cancer 1.76 [1.61;1.91], infection 1.71 [1.58;1.85], or diabetes 1.52 [1.41;1.63] were important.

Conclusion Comorbidities significantly influence survival of OHCA patients. Cardiovascular comorbidities constitute the major part of the disease burden. The influence of comorbidity should be included in future treatment guidelines of OHCA patients.

Conflict of interest None.

Funding None.

Cardiac arrest

| 257 | REDUCTION IN EMS RESPONSE TIMES FOR OUT-OF-HOSPITAL CARDIAC ARREST USING DRONE-LIKE FLYING AMBULANCES IN LARGE URBAN AREAS IN FRANCE AND CANADA: AN INTERNATIONAL, QUASI-EXPERIMENTAL STUDY |

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10.1136/bmjopen-2022-EMS.14

Background Shortening EMS response times lead to better outcomes after out-of-hospital cardiac arrest (OHCA). To overcome constraints encountered by ground ambulances, vertical take-off and landing (VTOL) capable flying ambulances are currently being developed. We compared simulated VTOL response to historical ground ambulance response for OHCA in two large metropolitan areas in Europe and North America.

Method We conducted an international, multicenter, quasi-experimental study on adult, non-traumatic, EMS-assessed, non-OHSC witnessed OHCA occurring in the greater Paris (France) and Vancouver (Canada) metropolitan areas, over a 2-year span (2018–2020). Data were drawn from Utstein-style, population-based OHCA registries. VTOL response times were simulated based on prototype specifications. Response times were defined from call reception to arrival at scene. Simulation models considered 1–5 VTOL vehicles placed in optimized locations. We determined the proportion of OHCA for which VTOL response times were at least 1-min shorter than historical response from ground-based units.

Results In total, 13,933 cases were included (6,616 in Paris; 7,317 in Vancouver). Simulated VTOL response times were substantially shorter than those of ground-based units, varying from 59% (1 VTOL) to 76% (5 VTOL) in Paris, and 17% (1 VTOL) to 40% (5 VTOL) in Vancouver. In both locations, median response times were reduced by 1–3 minutes, and 90th percentile response times by 1–5 minutes, varying upon model configuration. For OHCA with improved response, the median improvement was 3–4 minutes, and 90th percentile improvement was 8–10 minutes in both areas.

Conclusion Simulation models of VTOL-capable flying ambulances show major theoretical reduction in EMS response times for OHCA in two large European and North American metropolitan areas.

Conflict of interest None.

Funding None.

Cardiac arrest

| CAN MOBILISING AEDS BY INSTALLING THEM IN TAXIS IMPROVE ROSC? |

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10.1136/bmjopen-2022-EMS.13

Background The automated external defibrillator (AED) can restore normal heart rhythm in cardiac arrest victims. Early defibrillation correlates with increased rate of out-of-hospital cardiac arrest (OHCA) survival. However, AED availability remains a challenge. We aimed to measure key time intervals before an ambulance arrives, however further exploration into the influence should be included in future treatment guidelines of OHCA patients.

Conflict of interest None.

Funding None.

Cardiac arrest

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