

WELCOME TO OUR

First Newsletter



AED Delivery



Photos by Everdrone

Welcome to the DAEDALUS project newsletter, where we'll be sharing updates on our work exploring how drone technology could help improve the emergency response to cardiac arrest. In each edition, we'll give a simple overview of the project, what we're learning, and what's coming next. Thank you for taking the time to read this—we really appreciate your interest and support.

What does **DAEDALUS** stand for?
Drone **D**elivery of **A**utomated
External **D**efibrillators to **L**ay **U**sers



In this newsletter you will find:

What this project is about and how you can get involved. Keep Reading!



[NHS Wales The Chain of Survival](#)

Why this research matters

A cardiac arrest is when someone's heart suddenly stops beating. When this happens, blood stops flowing to the brain and body, and the person will quickly become unconscious and stop breathing normally.

In the UK, around 43,000¹ people have an out-of-hospital cardiac arrest each year.

Sadly, survival rates are low, with around 1 in 10 people surviving a cardiac arrest.¹

The most important factor is time. For every minute that passes without treatment, the chance of survival falls by approximately 10%. However, survival can increase significantly when people nearby act quickly by calling for help, starting CPR, and using an AED.

[1. Resuscitation Council UK 2024 statistics](#)

What helps save lives?

Three things that can make a life-saving difference. These form part of the “chain of survival” – a series of critical steps that, when carried out quickly, give someone the best chance of surviving a cardiac arrest:

- **Early recognition of the cardiac arrest** and immediate call for help
- **CPR (cardiopulmonary resuscitation)** – pushing hard and fast on the chest to keep blood flowing
- **AEDs (automated external defibrillators)** – small devices that can deliver an electric shock to restart the heart

What's the challenge?

Even though we know early bystander CPR and defibrillation increase someone's chance of survival, it doesn't always happen in time.

Ambulances respond as quickly as possible, but they can't always reach someone within those first critical minutes. Bystander CPR is essential, and the use of AEDs, which are available in many places, can be lifesaving, but they are not always nearby, easy to access, or widely known about.

Even when an AED is available, people may feel unsure about using it in a stressful situation.

This creates a gap between what could save a life, and what actually happens in those first few minutes.



Drones are a new approach

💡 A DRONE DELIVERING AN AED DIRECT TO THE SCENE OF A CARDIAC ARREST MAY CLOSE THIS GAP.

A drone is a small, Unmanned Aerial Vehicle (UAV) that can be flown remotely or follow a programmed route.

The aim is for a drone to bring a defibrillator close to the person who needs it before the ambulance arrives.

However, speed alone is not enough. The AED must also be easy to find and use, with clear guidance to help people act confidently.



About the study

This study is exploring how drones could be used as part of the UK's 999 emergency response to deliver AEDs to people experiencing a cardiac arrest.

Rather than just looking at how fast a drone can fly, we are focusing on the whole process. This includes how the drone is dispatched during a 999 call, how it arrives on scene, and how the person calling for help is supported to find and use the AED.

We are working closely with ambulance services, drone operators, airspace regulators, and members of the public to design and test this approach in a way that could work in real life.

By bringing all of this together, we hope to develop a system that helps people get the right support, at the right time, and improves the chances of survival from cardiac arrest.



Who's involved?

THIS STUDY IS A COLLABORATION BETWEEN SEVERAL ORGANISATIONS:

- *University of Surrey*
- *South East Coast Ambulance Service NHS Foundation Trust (SECAMB)*
- *Air Ambulance Kent Surrey Sussex (AAKSS)*



What's next?

OVER THE COMING MONTHS, WE WILL FINALISE THE FULL PROCESS FOR HOW DRONE-DELIVERED AEDS COULD WORK IN PRACTICE.

The next step is to test this in realistic simulation days.

During these sessions, participants will take part in a simulated emergency. They will be asked to make a simulated 999 call and will be guided through the usual triage process by a 999 call handler.

They will have a manikin acting as a patient and will begin CPR, just as they would in a real situation.

At the same time, a drone will be dispatched from a different location. This includes real-world steps behind the scenes, such as airspace checks and coordination with the drone pilot.

By working together, we are combining research, clinical practice, and real-world experience to design a system that could improve emergency care.



The drone will deliver an AED nearby



Participants will be guided to find and retrieve it, and the call handler will advise the bystander to follow the device's instructions.

We are planning to run four simulation days, with multiple scenarios in each. After every simulation, we will ask what went well and what could be improved, and use this to refine the process for the next session.

By the end, we hope to have developed a system that is not only fast, but clear, practical, and easy for people to use in a real emergency.

Get involved

WE ARE KEEN TO INVOLVE A WIDE RANGE OF PEOPLE IN THIS STUDY, PARTICULARLY MEMBERS OF THE PUBLIC WITH NO MEDICAL BACKGROUND.

If you are interested in taking part in an interview, getting involved in our simulation days, or simply finding out more, we would love to hear from you.

The simulation days will be taking place later this year in the Surrey and West Sussex area (South East England), with full details to be confirmed.

If you have any questions or would like to get involved, please contact:

Angela Heeler, Research Fellow

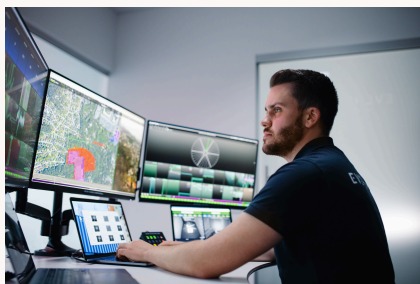
a.heeler@surrey.ac.uk



Thank you

THANK YOU FOR YOUR INTEREST IN THE STUDY AND FOR TAKING THE TIME TO READ THIS UPDATE.

We are very grateful to everyone who has supported the project so far, including our partners, stakeholders, and members of the public who have shared their time, experiences, and insights. We look forward to sharing further updates as the study progresses.



This project is funded by the National Institute for Health and Care Research (NIHR) under its Research for Patient Benefit (RfPB) Programme (Grant Reference Number NIHR208149). The views expressed are those of the author(s) and not necessarily those of the NIHR or the Department of Health and Social Care.



UNIVERSITY OF
SURREY

If you would like to receive future updates, you can join our mailing list and find out more about the study here:

[DAEDALUS website](#)