

# “AED on the Fly” with Region of Peel Paramedics and Sunnybrook Centre for Prehospital Medicine



Drone Delivery Canada's proprietary FLYTE software system and Sparrow drone were used to deliver Automated External Defibrillators to simulated cardiac arrest patients. AED on the Fly achieved an 100% success rate, leading to the conclusion that utilizing DDC's drone delivery platform to enable rapid first responder technology via drone produces reduced response time.

## Challenges and Objectives

Ambulance response time plays a critical role in the likelihood of survival in out-of-hospital cardiac arrest (OHCA). Studies have shown that shortening ambulance response time increases the survival of patients experiencing OHCA.

## Solution

Drone Delivery Canada (DDC) conducted a pilot project to determine the effectiveness of the delivery of an AED (Automated External Defibrillator) via drone versus a traditional ambulance.

The AED on the Fly pilot project involve three phases.

**Phase 1:** The Township of Caledon simulated 911 emergency calls and the Region of Peel dispatched DDC's Sparrow drone equipped with a specialized first responder payload that included an AED. The delivery time of the drone was then compared against the traditional dispatching of first responder paramedics. The Sparrow arrived on-site ahead of the traditional responder vehicles in all simulated tests.

 **Region of Peel**  
working with you

Peel Regional Paramedic Services provides prehospital medical care and is one of Canada's busiest paramedic services, responding to more than 140,000 calls in a year.

 **Sunnybrook**  
CENTRE FOR PREHOSPITAL MEDICINE

The Sunnybrook Centre for Prehospital Medicine is an organization committed to excellence in the delivery of specialty medicine that occurs before patients arrive in Ontario hospitals.



DDC's Sparrow RPA was used to deliver AED's at a total round-trip flight distance of 12km

**Phase 2:** The Sparrow with the new cargo drop functionality and audio announcement system were used to drop an AED where a designated lay bystander retrieved the AED and applied it to a simulated cardiac arrest patient in a rural environment. Multiple different bystanders and locations were used to test the AED Drone solution.

**Phase 3:** Simulated 911 call locations were sent electronically to DDC's Operations Control Centre (OCC) and the Sparrow was dispatched from a Peel Paramedic station in Caledon to the destination and back. Real-time remote monitoring occurred from the OCC using DDC's proprietary FLYTE system software.

## Results

Compared to a land-based vehicle, the AED drone had a shorter travel time - a major factor in responding to cardiac arrest. The testing validated that using DDC's proprietary drone delivery platform with cargo drop functionality to deliver rapid first responder technology via drone may reduce response time to cardiac arrest patients in the field while being utilized by lay responders.

**"We were able to demonstrate that drone technology to deliver AED's for cardiac arrest is not only feasible but has the potential to reduce response times and improve outcomes from out-of-hospital cardiac arrest."**

**- Dr. Sheldon Cheskes, Associate Professor at the Department of Family and Community Medicine, University of Toronto and the Principal Investigator of the 'AED on the Fly' Pilot Research program**

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