

## **Extract from ESC publication for annual conference 2015**

### **Topic area**

Improving Cardiopulmonary Resuscitation

### **Bedside**

FirstAED emergency dispatch, global positioning of first responders with distinct roles - a solution to reduce response times and ensuring early defibrillation on a bridge connected island area

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### **Background**

The national survival rate for out-of-hospital cardiac arrest is approximately 11%. Guidelines recommend cardiopulmonary resuscitation (CPR) within 5–6 minutes and early defibrillation with an automated external defibrillator (AED) with the purpose to increase survival rates. Shortening the ambulance response time to less than six minutes in the rural areas, is however unrealistic.

### **Purpose**

FirstAED is an auxiliary to the public emergency services and enables the dispatcher to send an organized team of first responders to the scene. FirstAED organizes three first responders in a team: no. 1 reaches the patient to give CPR; no. 2 brings the AED; no. 3 is the on-site coordinator. The aim is to shorten the first responder response time at emergency calls and the time to the AED on-site to below 5–6 minutes in both public/residential/rural settings in a bridge connected island area.

### **Methods**

CPR and first aid is provided by 175 trained lay first responders who use their smartphone (iPhone 4S/5). The island is characterized by 13,000 inhabitants and long distances to the nearest hospital. The population purchased 95 AED's which are available around the clock and placed less than two kilometres apart. FirstAED global positioning system (GPS)-track the nearby first responders who can accept or reject the alarm. FirstAED chooses the three most optimally placed first responders who accepted the alarm.

### **Results**

During the first 24 months the FirstAED GPS system was used 718 times. FirstAED entailed a security for first responder CPR and a significant reduction in median response time from more than 8 minutes before to 4 minutes 9 seconds after. The response time was faster than the comparable median ambulance response time at 13 minutes and 20 seconds. The AED was on-site in more than 99% of the cases and with a median on-site time of 5 minutes and 47 seconds. The first responder response times were short all over the island (public/residential/rural settings). Thirty first responders accepted the alarm more than 25 times. Three first responders arrived in 89.1%, two first responders in 7.1%, one first responder in 3.0% of the cases. The first responders arrived before the ambulance in 94.3% and at the same time in 2.4% of the cases. The first responders were involved in cardiac arrests, respiratory arrests and a patient with subarachnoid hemorrhage.

### **Conclusions**

Global positioning tracking and a team structure with distinct roles reduces the response times and ensures the possibility for CPR and early defibrillation in public/residential/rural settings of the island.

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