

Mission – Europe Heart Safe

A 3-minute zone Heart Safe Europe by 2030

Creating a European OHCA Framework: how to save the lives of 350.000 people – every year!

1) Mission Statement

In Europe (population over 500m), more than 500,000 people (0.1%) per year suffer from OHCA (Out-of-Hospital Cardiac Arrest).

Creating a European OHCA Framework will save the lives of 350,000 people - every year. AED360's share of the above is targeted at saving the lives of more than 65,000 lives per annum in 2030, in close partnership with our AED reseller network in Europe.

2) OHCA Framework: the Netherlands

The OHCA framework to be created that is referred to, is currently in use in The Netherlands. For The Netherlands, a survival rate for OHCA victims of 30% has been achieved in 2020. On a population of 17m, and 17,000 OHCA cases per year, this saves over 5.000 lives per year.

- 6-minute zones nationwide (1 AED per 3,14 km²)
- A nationwide, independent central Registry integrated with the national 112 Emergency Number System:
 - Over 20.000 centrally registered AEDs, 20% of which are Crowdfunded through the AED360/Philips/Dutch Heart Foundation Crowdfunding Platform – Exhibit 2
 - Over 225.000 centrally registered Text Messaging Community Responders
- One way AED transportation system (Exhibit 1)

A further increase of the AED density to 2 per 1 km² in residential areas will effectively create 3-minute zones. This is expected to increase the rate of survival to 65%, saving over 1.,000 lives per annum in The Netherlands.

3) OHCA Framework: Europe

The European OHCA (Out-of-Hospital Cardiac Arrest) Framework is an extrapolation of the model currently in use in The Netherlands into Europe.

- Nationwide, central, independent AED and Text Messaging Community Responder Registries, integrated with the 112 Emergency Number Systems
- 3-minute zones in the 20% most densely populated areas in Europe by 2030, by installing a minimum 1.6 million registered AEDs, to cover 90% of the population
- At least 1% of the population to be registered as TM (Text Messaging) Community Responder by 2030 (over 5m people in Europe)

The above will allow for implementation of the "One way AED transportation system" (described in more detail in Exhibit 1), which improves time to defibrillation and reduces the number of AEDs needed to achieve 3-minute zones and 65% OHCA survival rate.

4) OHCA survival rate

An OHCA survival rate 65% by 2030 may seem ambitious. However, in Japan (125 million inhabitants) it is already at 45% (2020).

In certain areas, even higher survival rates (of 70% or higher) have been observed. See Exhibit 3 for an example, a case study in Stockholm.

5) AED360

As AED360, we will encourage and promote all of the above. We aim to account for 15% of all AEDs installed in Europe by 2030.

AED360's Crowdfunding Framework will be an important tool for selected AED360 partners to help achieve this.

Exhibit 1 – The Dutch OHCA Framework - how does a one-way AED transportation system work?

In The Netherlands, with a population of 17m, 17,000 people per year suffer from OHCA (83% occur in and around home). By 2020, a OHCA survival rate in The Netherlands of 30% has been achieved, saving over 5,000 lives per year.

To increase the efficiency of the AEDs that have been placed and registered, a structured OHCA system is implemented in The Netherlands. This allows for a "One way AED transportation system".

For every OHCA incident, at least 10 registered TM (Text Messaging) Community Responders are directed to the scene via Text Messages. The route of 2/3 of them leads them to a registered AED first. The other 1/3 is being directed to the scene directly, no detour.

On average, 2 AEDs, and 4 to 5 Community responders arrive.

This is described in more detail:

- In this case study in The Netherlands from the European Resuscitation Council: [Report ERC: AED and text message responders density in residential areas for rapid response in out-of-hospital cardiac arrest \(2020\)](#)
- Another study: [Local lay rescuers with AEDs, alerted by text messages, contribute to early defibrillation in a Dutch out-of-hospital cardiac arrest dispatch system](#)

Exhibit 2 – AED360/Philips/Dutch Heart Foundation Crowdfunding Platform

The AED Crowdfunding platform in use in The Netherlands by the Dutch Heart Foundation and Philips is now available as framework to AED360 international partners. It is highly customisable, ready for use and no upfront investments are needed.

This is the website of the AED360/Philips/Dutch Heart Foundation Crowdfunding Platform <https://www.buurtaed.nl/> (you may want to use Google Translate).

The first ideas for this Crowdfunding project were discussed with Philips Netherlands and the Dutch Heart Foundation back in 2015. First, a market research study learned that people were willing to pay € 50,= for a shared AED in their street, borrow or neighbourhood.

At the same time, the Dutch Heart Foundation had set out an objective to make The Netherlands heart safe by creating 6-minute zones, and a central, independent registration of AEDs and Community Responders.

It took 3 years from idea to working platform and in 2018, the AED360/Philips/Dutch Heart Foundation Crowdfunding Platform was launched in The Netherlands, supported by a massive media spend of €1.5m, most of which was funded by the Dutch Heart Foundation, and Philips provided funding as well.

In 2,5 years the platform, directly and indirectly, generated sales and installation of over 3,000 Philips AEDs, and a lot of awareness is generated in The Netherlands. This also helped to increase the number of Text Messaging Community Responders. As a result of all of this, the rate of OHCA survival in The Netherlands is up to 30% (2020).

Exhibit 3 - Survival after Public Access Defibrillation in Stockholm, Sweden – A striking success

Background

In Stockholm, a first responder system and a Public Access Defibrillation (PAD) program has been implemented. Additionally, the number of “unregulated” public Automated External Defibrillators (AEDs) sold “over-the-counter” has increased. The aim of this study was to evaluate the impact on survival from different defibrillation strategies in cases of out-of-hospital cardiac arrest (OHCA) available for PAD.

Conclusions

In OHCAs available for PAD, 70% of patients survived if a public AED was used. Both the structured AED program as well as the spread of unregulated AEDs was associated with very high survival rates, but the structured approach was more efficient in relation to the number of AEDs used

<https://www.sciencedirect.com/science/article/abs/pii/S0300957215001112>

Exhibit 4 – Maastrich Uni study (Ruud Pijls)

<https://cris.maastrichtuniversity.nl/en/publications/the-contribution-of-citizen-rescuers-to-survival-after-out-of-hos>

Exhibit 5 - Costs and wins

The business case, to justify the investment to create a Heart Safe Europe, is a no-brainer. By investing €5bln, between €2tln and €3.2tln (€2,000bln - €3,200bln) in healthy life years will be saved in the period 2020-2030, and as of 2030, €350bln every year.

The investment to be made in a Heart Safe Europe for the period 2020-2030 is some €2.5bln in AEDs, plus another €2.5 to cover for supplies and replacement, setting up infrastructures, creating awareness, recruiting Community Responders and other costs/investments. The safe estimate is €5bln in total.

The median age of OHCA victims is 60 years. On average, a person of 60 years of age has some 20 healthy years ahead. So for each person that is rescued from OHCA, on average, 20 healthy life years are won.

1 healthy life year reflects a value of between €50k and €80k. This may seem a brutal statement, however it has been published often recently in COVID-times. Between €50k-80k is what society is willing to pay/calculate, for treatment and/or medicine to have 1 year of healthy life in return for a sick person. Or to state it differently, for example measurements for traffic safety are evaluated by the same mechanism: if the costs per gained healthy life year exceed €80k, the measurement will be declined as too expensive.

If we calculate 20 years of a value of €50k-80k each, the total value for each saved OHCA victim is between €1m-1.6m. Over the period 2020-2030, the total value is between €2 trillion and €3.2 trillion (between €2,000 billion and 3,200 billion)!

Annual value as of 2030 is €350 billion per year. At an annual cost of €0.6 billion (€600 million) for running costs and replacement costs.

This is only the financial gain.....saving so many lives is worth much more than what the above math suggests!