

AutoPulse®

ZOLL®



**A BRIDGE TO
ECMO AND PCI**



A Bridge to Advanced Care

Treating a patient in refractory cardiac arrest is always challenging. What options are available to achieve return of spontaneous circulation (ROSC) and, ultimately, survival to discharge?

Advanced treatment with percutaneous coronary intervention (PCI), as well as extracorporeal membrane oxygenation (ECMO), is often the answer. Providing high-quality CPR throughout the duration of the event, from the scene of the arrest to PCI or an ECMO facility, is essential. The AutoPulse® Resuscitation System is an automated CPR device that provides high-quality CPR to bridge the gap from the scene until the completion of advanced treatment.

Excellent Neurological Outcomes



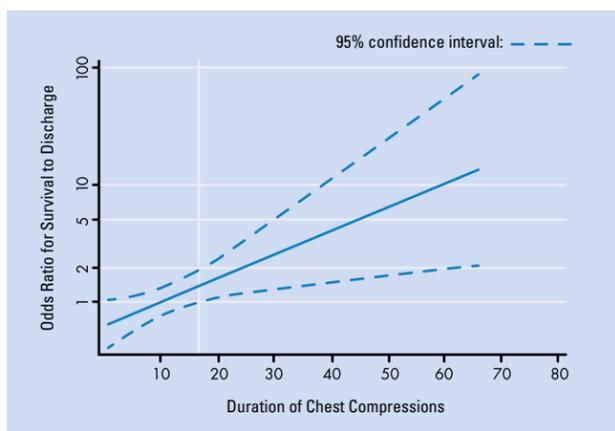
A recent clinical trial that evaluated the effectiveness of multiple interventions for patients in refractory cardiac arrest illustrated just how well this approach works. Patients who

experienced cardiac arrest received high-quality CPR with the AutoPulse, ECMO, hypothermia, and early reperfusion. The results were extremely encouraging: 96% of patients achieved ROSC, and 54% survived to hospital discharge with full neurological recovery (CPC 1).¹ It's clear that this powerful combination of therapies can result in outcomes well beyond those typically experienced in most cases of refractory cardiac arrest.

AutoPulse Proven to Improve Survival in Long Duration Cases

Numerous studies comparing AutoPulse to manual CPR clearly demonstrate its many advantages for patients. In the largest randomized trial to evaluate an automated CPR device (>4,000 patients), the AutoPulse had a significant survival benefit when compared with manual CPR when resuscitation efforts lasted 16 minutes or longer (see figure below)².

Survival to Discharge: AutoPulse vs. Manual CPR



Olsen JA, et al. *Acta Anaesthesiol Scand.* 2016 Feb;60(2):222-9.

Duration is in minutes. This clinical trial shows that the longer the resuscitation effort, the greater the survival benefit with the AutoPulse when compared to manual CPR.

When considering the amount of time required to provide high-quality CPR within the context of pavement to PCI and ECMO, using the AutoPulse allows rescuers to focus on other interventions during the entire period of the cardiac arrest event.

Guidelines-recommended for Prolonged CPR

The 2015 AHA (American Heart Association) Guidelines recommend automated CPR devices for prolonged CPR.³ However, the AutoPulse is the only automated CPR device proven to improve survival in cases involving prolonged CPR.² In addition, a meta-analysis of multiple clinical trials showed that while a piston-driven mechanical CPR device has no benefit in improving ROSC rates when compared to manual CPR, the AutoPulse increased ROSC rates by 62%.⁴

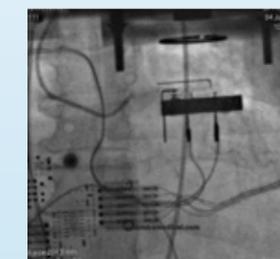
AutoPulse in the Cath Lab

The 2015 AHA Guidelines recommends the use of automated CPR in situations where providing high-quality compressions may be difficult and challenging for providers, including the catheterization (cath) lab.³

Because of its low profile, the AutoPulse is the ideal automated CPR device for the cath lab. Its design allows for optimal freedom of movement with the C-arm, making it possible to gain multiple images without having to reposition the X-Ray device. This includes visibility with an anterior-posterior view, which is not available with a piston-driven mechanical CPR device due to the nature of the piston design.

Angiographic Views with the AutoPulse

The images below were generated by two interventional cardiologists who use the AutoPulse as a standard of care in their cath labs.



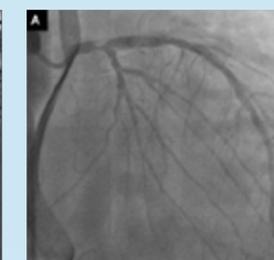
Posterior-anterior view*
LAO 1
CRA 0



Lateral cranial view†
RAO 21
CRA 27



Lateral cranial view†
LAO 27
CRA 18



Left anterior descendens (LAD)†
RAO
CAU

*Professor Simon Redwood
St. Thomas Hospital London, United Kingdom

† Dr J.R. Spiro
The Queen Elizabeth Hospital, University Hospitals
Birmingham, United Kingdom



"AutoPulse was not a step toward ECMO treatment—it was a jump! It has transformed the historical CPR 'stay-and-play' situation into a revolutionary 'load-and-go.'"

– Dr. Alberto Piacentini, HEMS Emergency Physician,
Anesthesiology

"Outcomes following OHCA can be optimized by integrating a physician-led cardiac arrest service and moving patients on an AutoPulse to a cardiac arrest center with immediate access to interventional cardiology and mechanical circulatory support such as ECMO."

– Dr. Paul S C Rees, Surgeon Commander, Royal Navy

Acute Critical Care Support

When treating patients in refractory cardiac arrest, the AutoPulse provides uninterrupted, high-quality compressions, giving medical professionals time to think and patients a chance to access lifesaving advanced treatment.

AutoPulse: Designed for **Resuscitation on the Move™**

¹Stub D, et al. *Resuscitation*. 2015;86:88-94.

²Olsen JA, et al. *Acta Anaesthesiol Scand*. 2016 Feb;60(2):222-9.

³Brooks SC, et al. *Circulation*. 2015;132(suppl 2):S436-S443.

⁴Westfall M, et al. *Crit Care Med*. 2013 Jul;41(7):1782-9.

ZOLL MEDICAL CORPORATION

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