

**AutoPulse®**

**ZOLL®**



**THE SYSTEM FOR  
HIGH-QUALITY CPR**

# RESUSCITATION ON THE MOVE

## Designed for patient movement and transport

The revolutionary ZOLL® AutoPulse® Resuscitation System is an automated CPR device that delivers customized, high-quality CPR whenever—and wherever—it's needed.

## High-quality CPR without interruption

With the AutoPulse, rescuers don't need to worry about pausing or potentially compromising CPR through tilts and turns, whether going down steep stairs, around tight corners, or into a cramped elevator. Thanks to its unique stabilizing board, the AutoPulse ensures patients receive nonstop compressions throughout their pre-hospital transport, even at the multiple angles required for rescuers to move the patient.

## Increased mobility and maneuverability

To increase mobility, the AutoPulse board can be used with a lightweight soft stretcher. This option offers the flexibility needed to keep high-quality CPR going while maneuvering through challenging spaces. The rescuer also has the option of securing the AutoPulse to a backboard if that's a better choice for the patient.



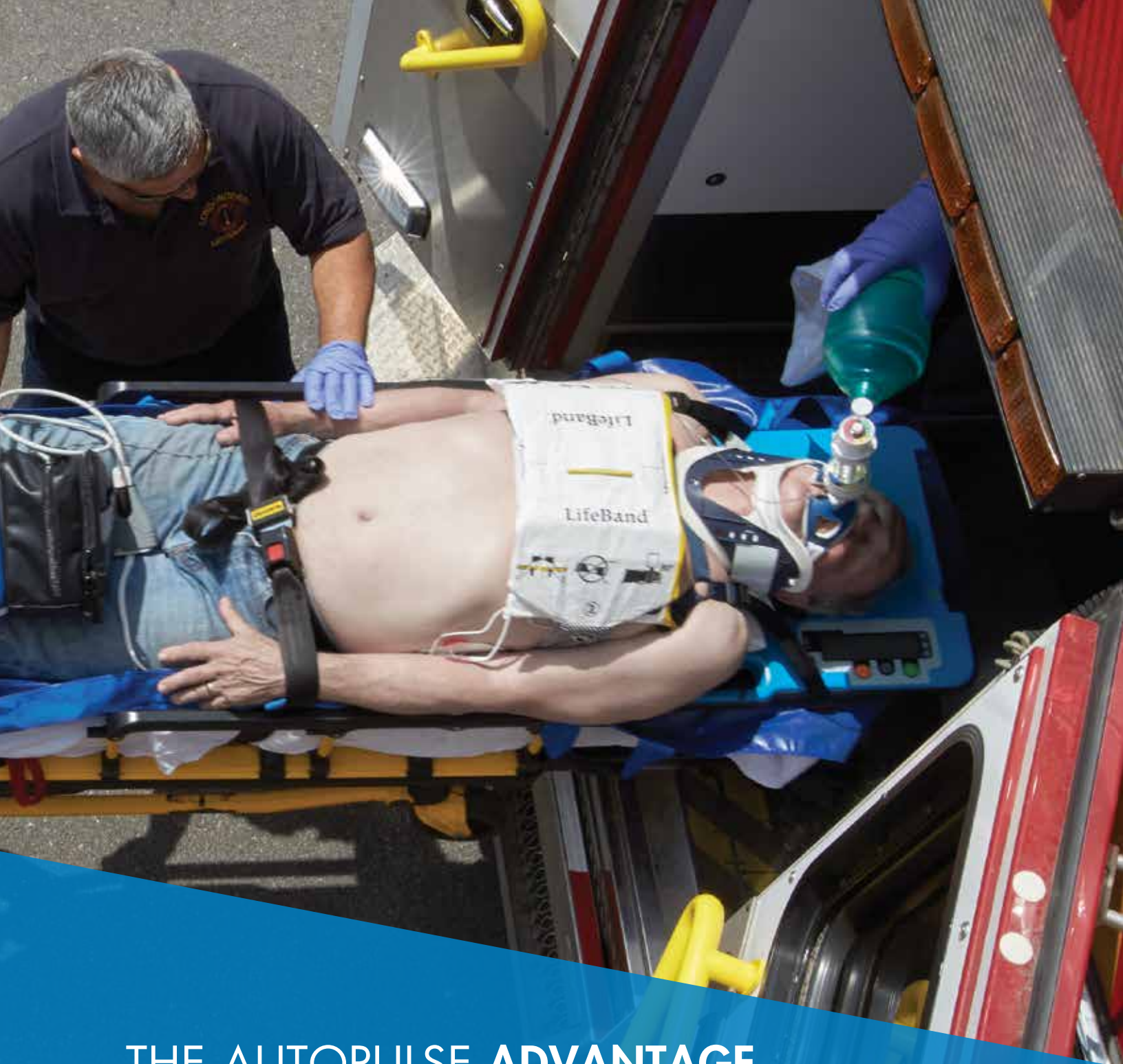
With the AutoPulse, patients receive high-quality compressions even during transport down steep stairs and through tight spaces.



"Since we had the AutoPulse, we could carry the patient down three flights of stairs while continuing chest compressions. He survived, but without the AutoPulse, it could have been different."

– Paramedic Alex Klimenko  
Richmond Ambulance Authority (RAA)





## THE AUTOPULSE ADVANTAGE

The AutoPulse Resuscitation System works wherever EMS providers need to go.

At its foundation is the specially designed board. It delivers stability and maneuverability, supporting both patient and rescuer from the scene of the rescue to the hospital. Depending on the situation, the rescuer has the option of securing the AutoPulse board to a soft stretcher or a backboard.

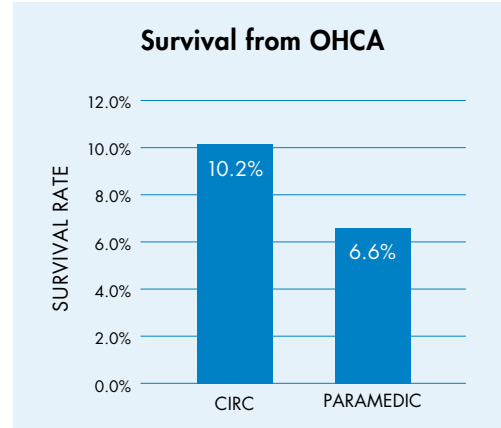
A 2015 study demonstrated the ability of the AutoPulse to limit interruptions in CPR while moving the patient. With regular training, the AutoPulse was applied in as little as 14 seconds, and the median time of overall interruption in CPR during patient movement from scene to the ambulance was reduced by over 85% compared to using manual CPR alone.<sup>1</sup>

# IT'S ALL ABOUT OUTCOMES

Numerous studies comparing the AutoPulse to manual CPR clearly demonstrate its many benefits for patients. And by every important measure of resuscitation success, the AutoPulse outperforms piston-driven mechanical CPR devices.

## Highest reported survival for all rhythms

Among the large prospective clinical trials that have been published using an automated CPR device, the AutoPulse has achieved the highest survival rate. In the CIRC (Circulation Improving Resuscitation Care) trial, the overall survival-to-discharge rate was 10.2%—among the highest ever achieved in an out-of-hospital cardiac arrest (OHCA) trial.<sup>2</sup> The PARAMEDIC trial, which used a piston-driven mechanical CPR device, had a 30-day survival rate of just 6.6%.<sup>3</sup>



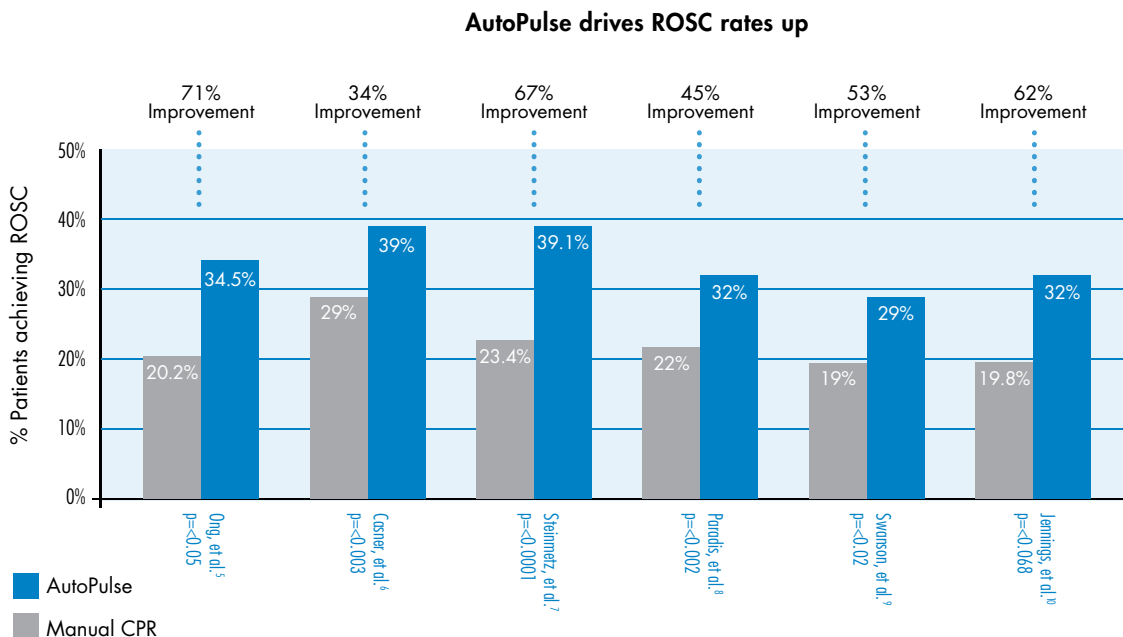
At 10.2%, survival in the CIRC trial was among the highest ever achieved in an OHCA trial.<sup>2</sup> Survival in the PARAMEDIC trial was just 6.6%.<sup>3</sup>

## Enhanced circulation

Multiple comparative studies have demonstrated improved vital signs because the AutoPulse drives superior blood flow, resulting in coronary perfusion pressure levels 33% higher than those of sternal compressions, positively impacting ROSC and survival.

## Unmatched impact on ROSC

While piston-driven sternal CPR devices have shown no benefit in improving ROSC rates when compared to manual CPR,<sup>4</sup> the AutoPulse has increased ROSC rates in numerous studies.<sup>5-10</sup>



Multiple trials confirm the AutoPulse is superior to manual CPR when it comes to increasing a patient's odds of achieving ROSC.

# INTELLIGENT CPR

## Customized compressions

The AutoPulse delivers compressions to the needs of each patient. Engineered to account for patient-to-patient variability, it automatically calculates the size, shape, and resistance of each patient's chest to achieve 20% anterior-posterior displacement.

## Integrated care delivery

It's clear that the AutoPulse delivers high-quality CPR. And when ZOLL's ResQPOD® ITD (impedance threshold device) is used in combination with high-quality CPR, survival has been shown to increase by 25% or more, due to the reduction in intracranial pressure and increased blood flow to the brain.<sup>11</sup>

## Event data access

Through the AutoPulse board, event data is captured and can be downloaded to RescueNet® Code Review for debriefing of resuscitation events to improve future performance.

Designed to overcome the real-life challenges of delivering good CPR, the AutoPulse is made for resuscitation on the move.

The AutoPulse uses a load-distributing LifeBand® that squeezes the entire chest, so patients receive consistent, high-quality compressions that drive good blood flow.





*"When I talk with any of my crews in the field, I always listen for the distinct whooshing sound of the AutoPulse. If I don't hear it, I worry. The AutoPulse is the sound of high-quality CPR. It saves lives."*

*– Michael G. Gonzalez, MD*

“What surprised us a lot about the use of the AutoPulse was the endurance of the batteries. Even in cold conditions, the device can continue to operate for 45 to 60 minutes.”\*

– Axel Mann  
Chief Medical Director, Air Zermatt



\*The typical initial battery run time for a nominal patient is 30 minutes.

<sup>1</sup>Lyon RM, et al. *Resuscitation*. 2015;93:102-106.

<sup>2</sup>Wik L, et al. *Resuscitation*. 2014;85:741-748.

<sup>3</sup>Perkins GD, et al. *The Lancet*. 2015;385(9972):947-955.

<sup>4</sup>Westfall M, et al. *Crit Care Med*. 2013 Jul;41(7):1782-1789.

<sup>5</sup>Ong ME, et al. *JAMA*. 2006; 295:2629-2637.

<sup>6</sup>Casner M, et al. *Prehosp Emerg Care*. 2005;9:61-67.

<sup>7</sup>Steinmetz J, et al. *Acta Anaesthesiol Scand*. 2008;52:908-913.

<sup>8</sup>Paradis NA, et al. *Circulation*. 2009;120:S1457.

<sup>9</sup>Swanson M, et al. *Circulation*. 2006;114:II\_554.

<sup>10</sup>Jennings PA, et al. *Resuscitation*. 2010.09.093;S20.

<sup>11</sup>Idris AH, et al. *Circulation*. 2012;126:LBBS-22813-AHA.

## ZOLL MEDICAL CORPORATION

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