

Focus on cardiac arrest: CARL is a new ECLS¹⁾ system for extracorporeal cardiopulmonary resuscitation (ECPR).

CARL.
A HEARTBEAT AHEAD



CARL. Controller

Perfusion system with automated dual pump control to generate high pulsatile blood flow.



CARL. MOX

Mobile oxygen supply for oxygenation and decarboxylation in the extracorporeal circuit.



CARL. Cooler

Mobile hypothermia device for rapid therapeutic cooling in context of extracorporeal circulation.

reSUSCITEC



CARL. Therapy

- Founded in 2010 as a spin-off from the University Hospital Freiburg. CARL received CE approval in 2020.
- Approximately 60 employees, expected to rise to 80 in 2022.
- Funding via venture capital, the KMU Innovativ program and the Horizon 2020.
- Use case: Acute cardiac arrest. Current survival rate very low (>20% in hospitals, 3-8% in the field). Persistent brain damage is common.
- Number of out-of-hospital cases: 357k in US²⁾, 70k in Germany³⁾ each year.
- New method: Controlled, targeted and personalized whole-body reperfusion both in- & outside of hospital.



Strengths

- Focused use case: ECPR (out-of & in-hospital).
- Study results⁴⁾: 50% survival rate, 43% CPC⁵⁾ "1" in prolonged CPR (1-2hrs) using CARL Therapy.
- Full system of mobile perfusion system, oxygenation and cooler units.
- Measurement and monitoring of vital parameters in real-time for personalized, controlled therapy.
- Short preparation time for a quick therapy start.



Weaknesses

- Missing FDA approval.
- Needs further studies and international presence.

Founder and initiator



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- Prof. Dr. Dr. h.c. Karl-Friedhelm Beyersdorf is a German surgeon, scientist and university lecturer.
- Beyersdorf's first focus was the implementation of blood cardioplegia to improve the heart's tolerance to ischemia during cardiac surgery.
- He made a decisive impact in the surgical treatment of heart failure.