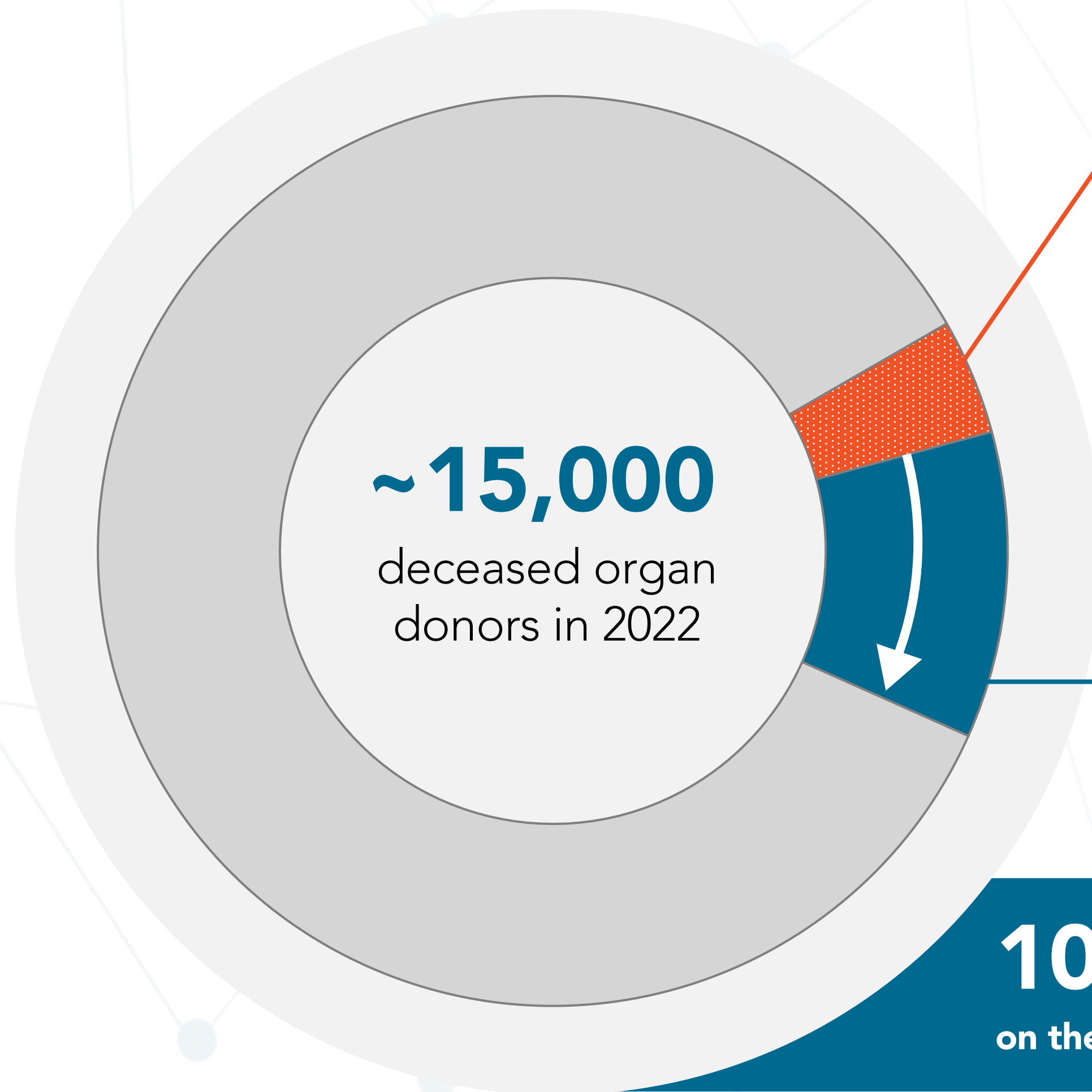




SAVING ORGANS SAVING LIVES



Organ Transplant Underutilized Despite Donor Availability



Only a fraction of organs are used for transplants

Potential to increase the use of donated organs and improve transplant outcomes by addressing challenges with current organ transportation technology

100,000+ people
on the U.S. national transplant waitlist



Providing More Patients with Access to Organ Transplants

VP.S ENCORE®

Designed to address key challenges with existing organ transport options and enable more heart transplant procedures



Portable



Easy to Use



Accessible



Reusable
Transport
Case

**Single-Use
System**
Heart Cartridge
Pump, oxygenator, & filter



**Extends Cardiac
Viability**

**No Need for Blood
or Red Blood Cells**

**FDA Breakthrough
Device Designation**

**Strong IP:
8 Patents on File**

Market Allocation: Available Hearts in the US for Transplant 2023

UNOS DATA

Heart transplants increased overall by 10.6 percent (4,545 in 2023)

DBD heart transplants increased 4.4 percent (3,933 in 2023)

DCD heart transplants increased 78.4 percent (612 in 2023)

Approx. 16,000
Deceased
Donors

30% Utilization Rate

4,545 Hearts Transplanted

11,455 Potential Hearts for Transplant

Cooler



44%
DBD
(Standard Criteria)

DBD
Donor after
Brain Death

Paragonix
SherpaPak



40%
DBD
(Standard Criteria)

DCD
Donor after
Circulatory Death

TransMedics
& NRP



16% DCD + Extended Criteria






**Extended
Criteria
Donors >55
years old +
clinical criteria**

70%
Not utilized
(Standard Criteria + Extended Criteria + DCD + Not Transplantable)

Utilized Hearts
U.S. Cardiac Market

Not Utilized Hearts
U.S. Cardiac Market

Positioned to Have Meaningful Advantages vs. Competitors

	Standard of Care	Paragonix	Transmedics	XVIVO	VP.S ENCORE®
					
U.S. Market Share (volume)*	60% ↓	30% ↑	10% ↑	n/a	n/a
System Type	Cold storage (no oxygen)	Cold Storage (no oxygen)	Normothermic perfusion	Hypothermic Oxygenated Perfusion	Hypothermic Oxygenated Perfusion
Requirements	n/a	n/a	Blood, full recovery team, and surgeon	Proprietary Perfusate with Cocaine + Packed Red Blood Cells	Off-the-shelf perfusate solution
FDA Approval	Standard criteria hearts	Standard criteria hearts	Extended criteria hearts and DCD hearts	Clinical Trial ongoing Extended Criteria Hearts and DCD	Not approved (Targeting Extended Criteria + DCD)
CC to CC Time for FDA	4 hours (including CC time)	4 hours (including CC time)	Non - suitable hearts with > 4 hours of CC time	Not determined EU Safety Study: 4.2 hours Australian/NZ Safety Trial: 7.2 hours	Up to 8 hours total CC time
Cost	Low Cost	\$20K	\$250K + \$65K per cartridge	\$207K + \$30K per cartridge	≈\$40k*
Company Status	Standard of Care	Private \$26M Series B in Mar '23	\$2.4B market cap \$93.5M 2022 revenue	Public, \$737M market cap \$38M 2022 revenue	Private
	DBD		DBD Extended Criteria DCD		1. DBD Extended + DCD 2.DB D

Management Team and Consultants

Management Team



Rafael J Veraza, PhD, MPH
Chief Executive Officer & President



Kristina Andrijauskaite, PhD, MEd, MS
Scientific Director



Tyler Dean
Director of Product Development



Toni Haenninen
Fractional CFO

Consultants



Benjamin Fisher, PhD
Former FDA Director

Former Director of Reproductive, Gastrorenal, Urological Devices in the office of Device Evaluation (ODE). Dr. Fisher reviewed and granted approval to all the lung, kidney, and liver organ perfusion devices currently in the market.



Kurt Dasse, PhD
Regulatory

30+ years developing and commercializing cardiovascular medical devices including the first implantable left ventricular assist device (HeartMate 1000 IP) for end-stage heart-failure patients.



Bennu
Engineering and Design

Developed Tevosol's EVOSS. acquired by Bridge to Life and then by TransMedics.



Josh Seidenfeld
Legal Counsel

Handled 350+ venture capital financings with an aggregate deal value of more than \$5 billion.



Technical Team



George Lamberson
Principal Mechanical Engineer



Zachary Maxwell
Lab Operations Manager / EA



Isabella Cano
Research Engineer



Maria Basurto
Electrical Engineer



Exal Cisneros
Research Engineer



Riley Lopez
Research Engineer



Scientific and Clinical Advisory Board

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Chair of Gordon Conference in Cardiac Preservation
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Surgical Director of the Heart Transplant Program at Baylor St. Luke's Medical Center



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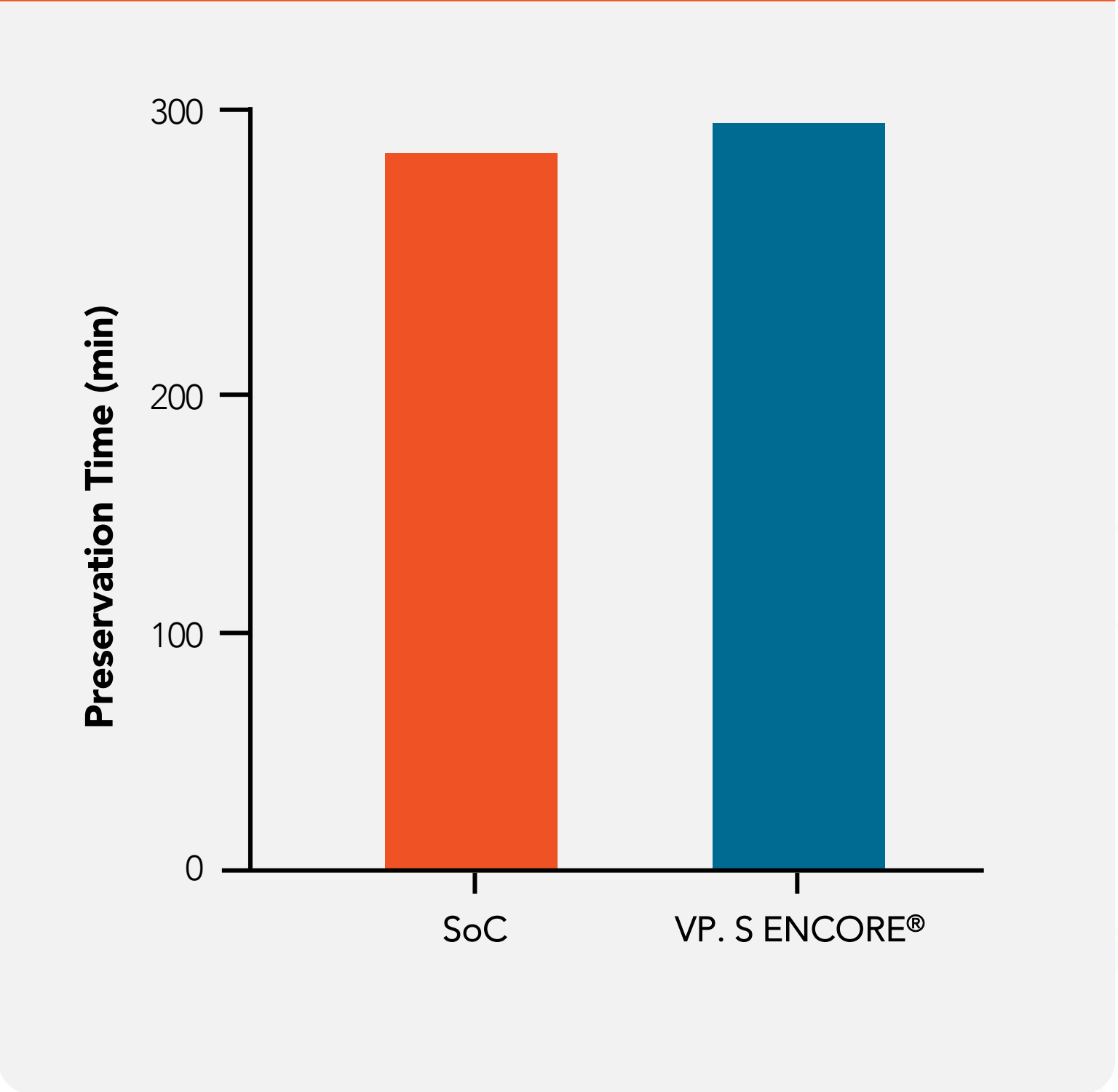
Recent Animal Study Demonstrates VP.S Advantages vs. SoC

Porcine Orthotopic Heart Transplant Case (July-August 2023)

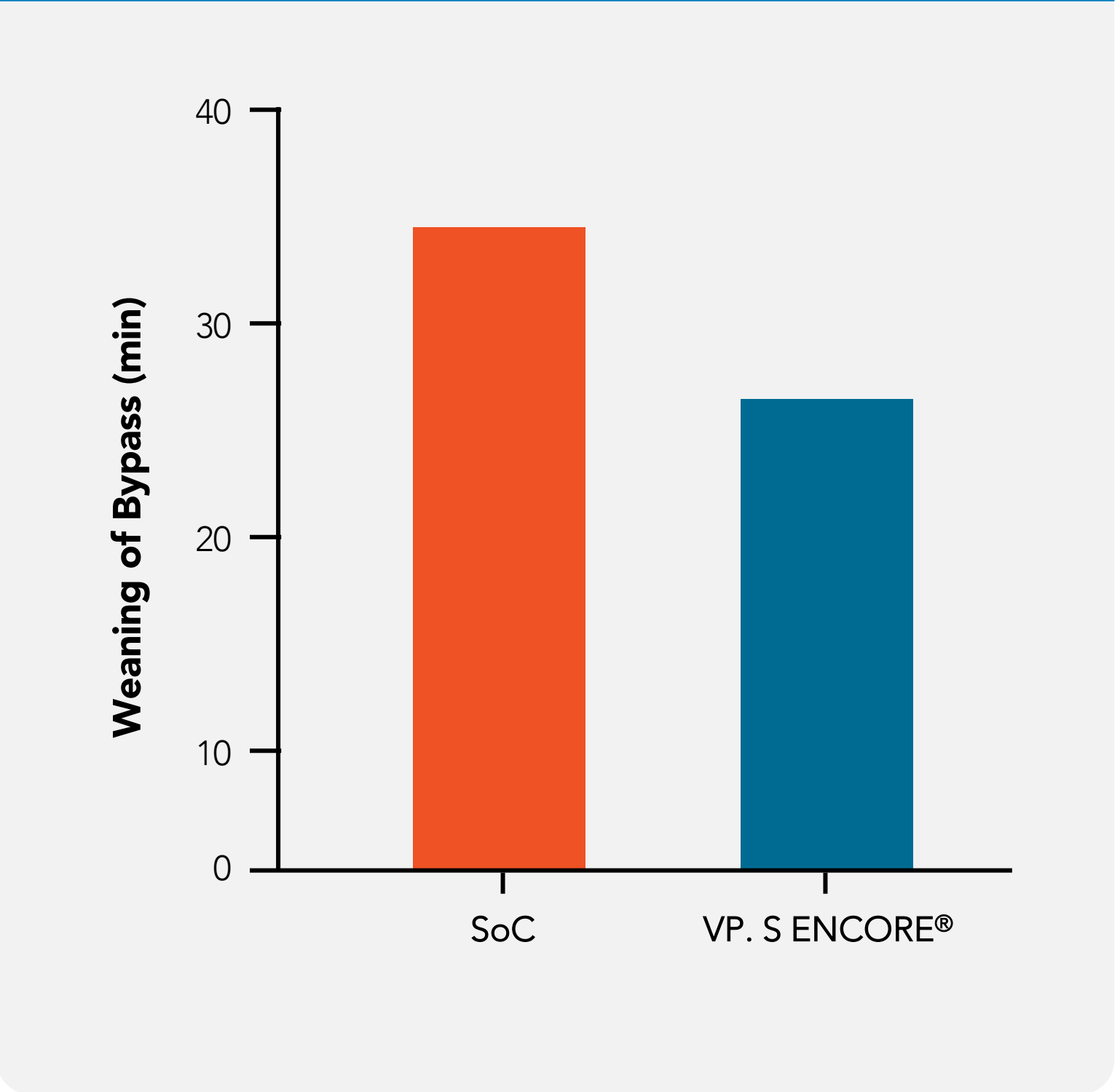
Study Background

- Porcine Orthotopic Heart Transplant
- Control Arm: SoC (cc-cc: 350mins)
- Experimental Arm: VP.S ENCORE® (cc-cc: 383 mins)
- Conducted at The Texas Heart Institute
- Followed up period: 6 hours post weaning off bypass

Preservation Time



Weaning of Bypass

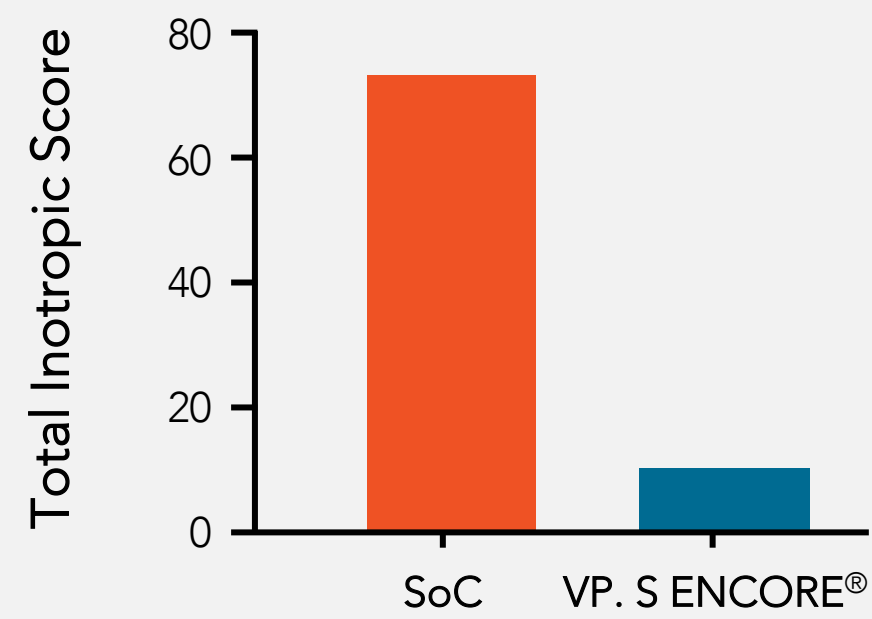


VP.S ENCORE® Heart Healthier Post Transplant

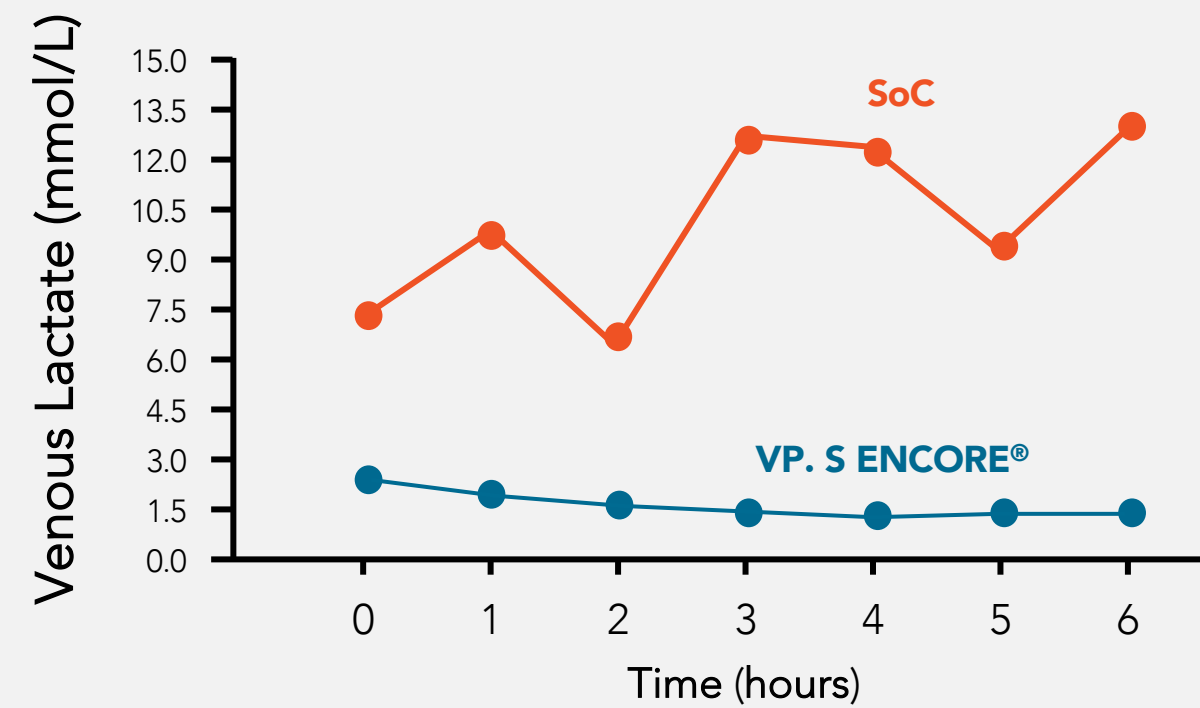
Compared to Standard of Care during 6-hour post Transplant follow-up

Cardiac Function

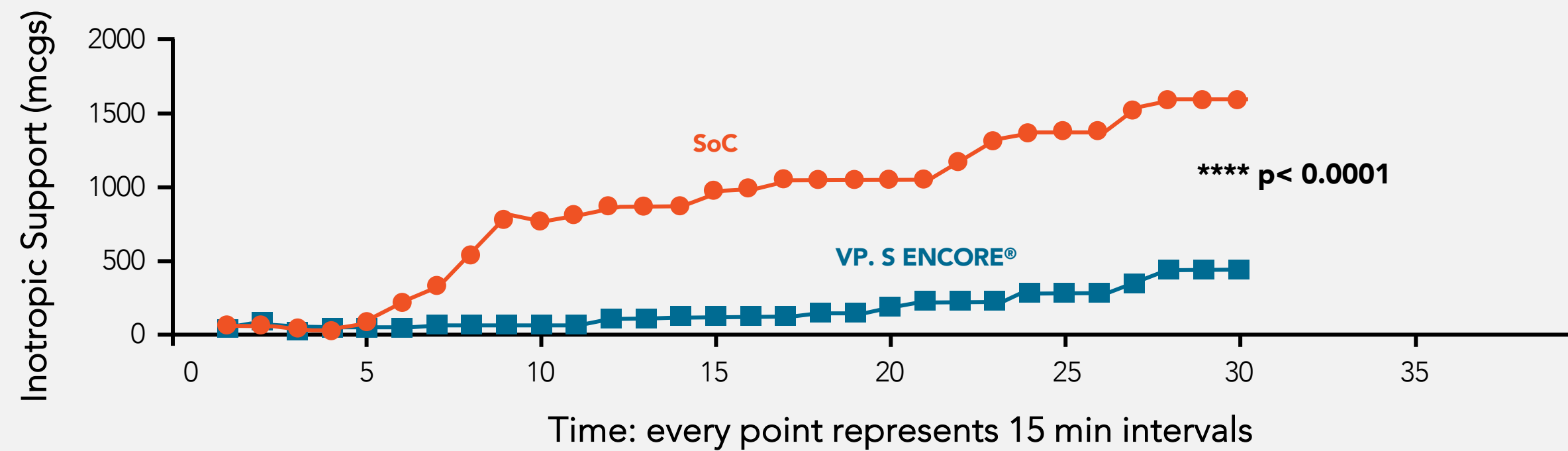
Total Inotropic Score



Lactate Trend After Transplant

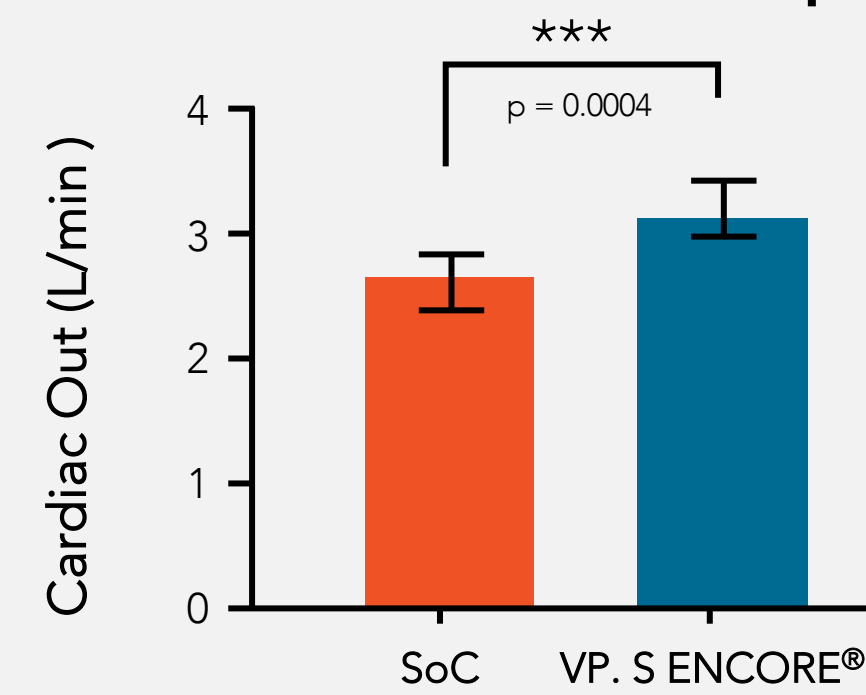


Total Inotropic Support Over Time

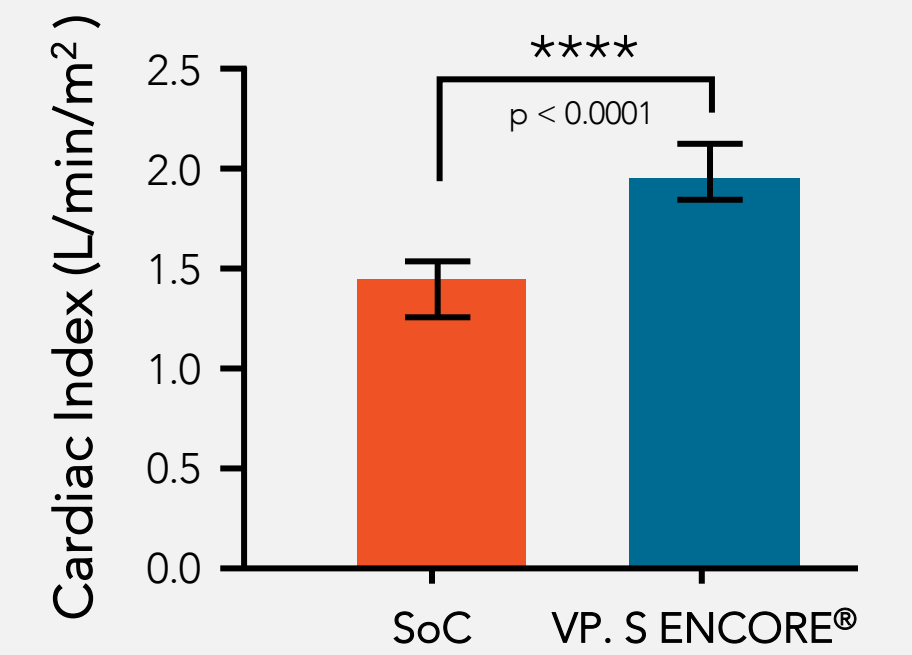


Cardiac Hemodynamics

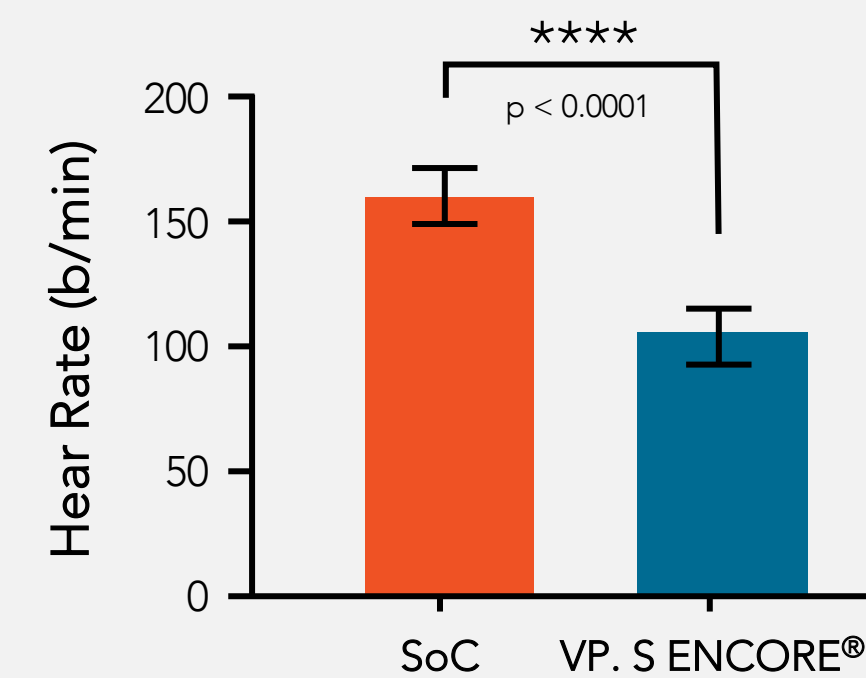
Mean Cardiac Output



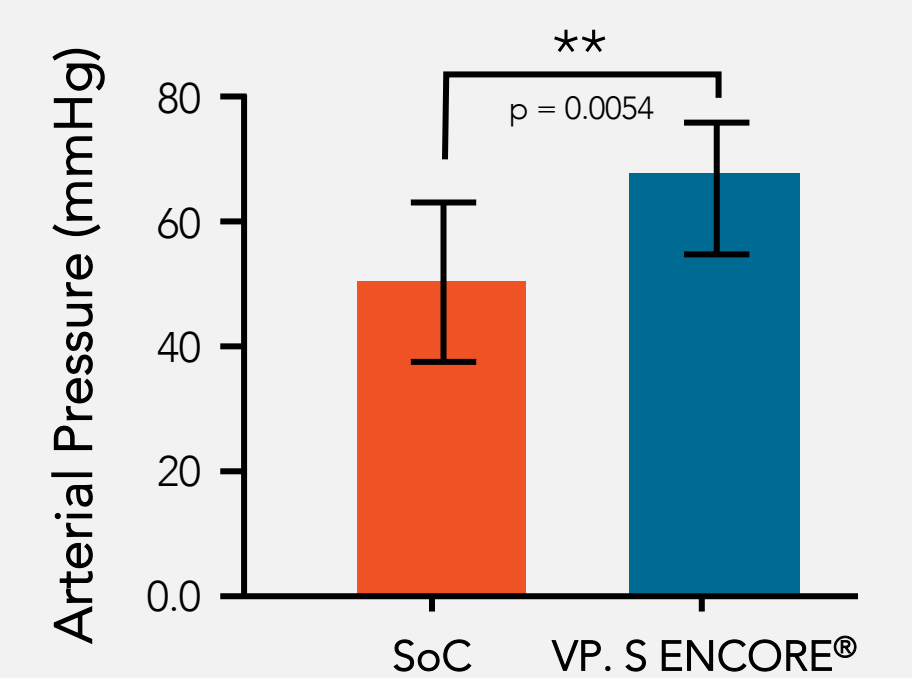
Mean Cardiac Index



Mean Heart Rate

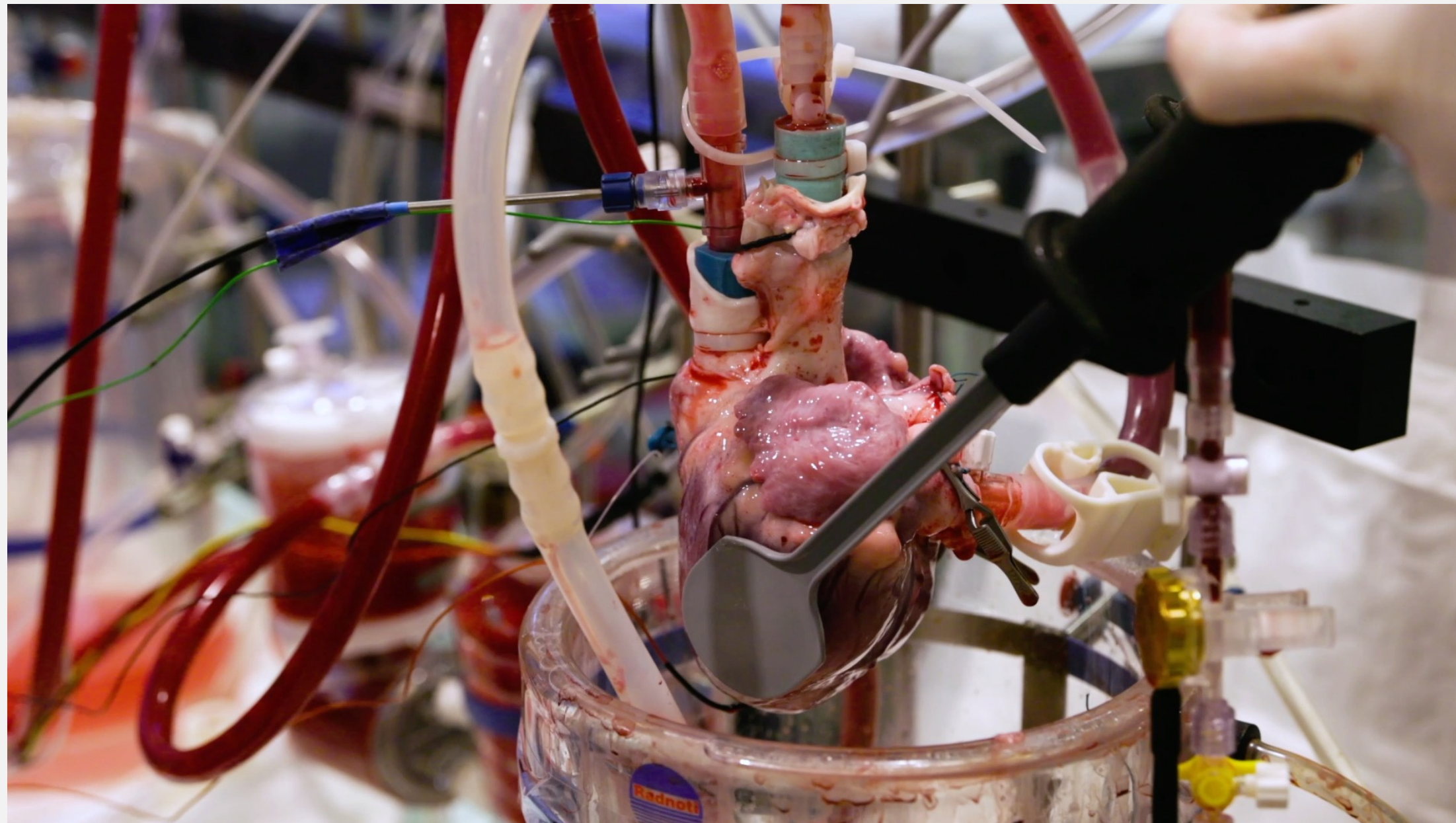


Mean Arterial Pressure



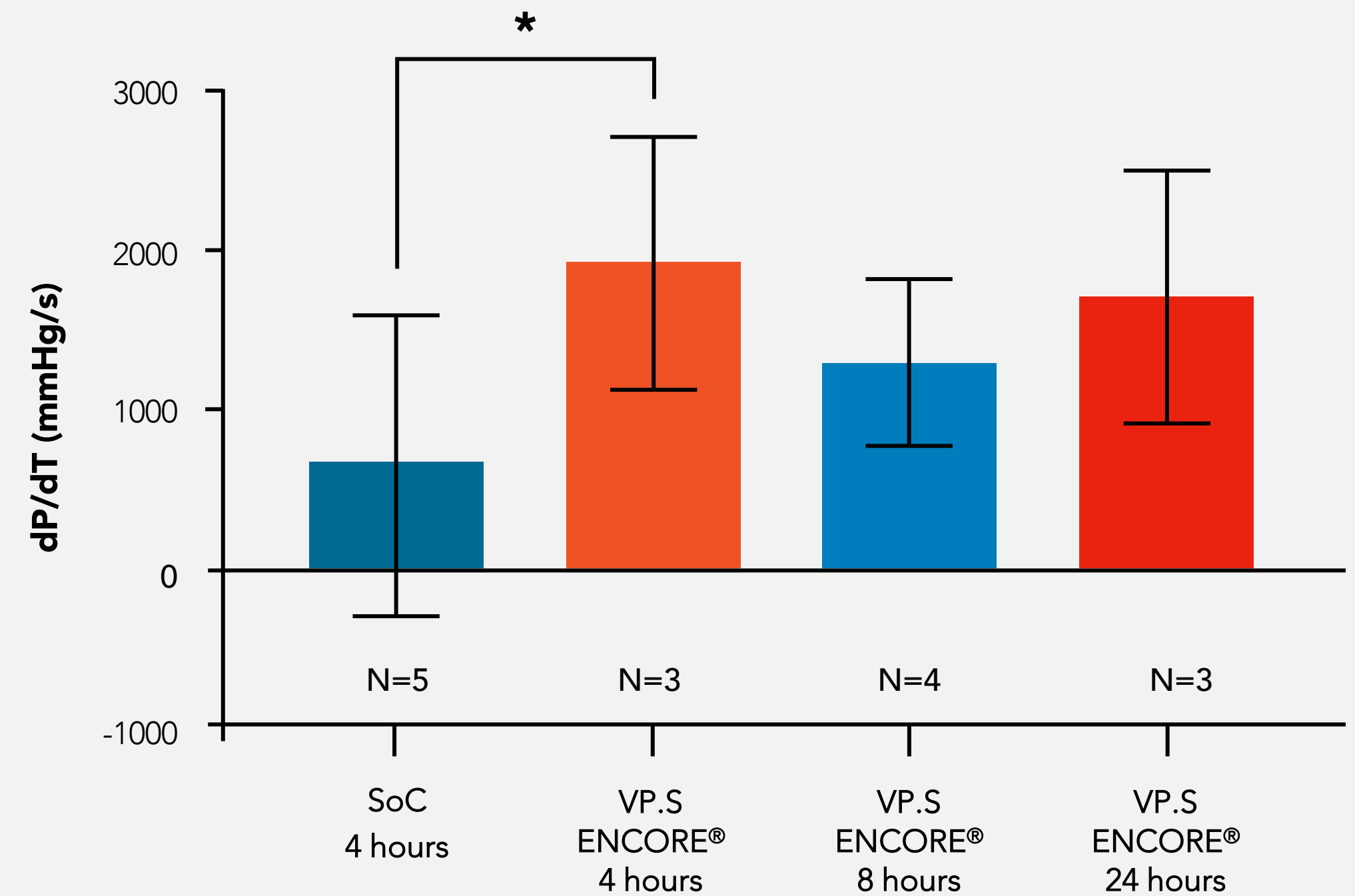
VP.S ENCORE® Demonstrates Improved LV Contractility vs. SoC

24-hour Porcine Heart vs 4-hour Control Standard of Care



[Click Here](#)

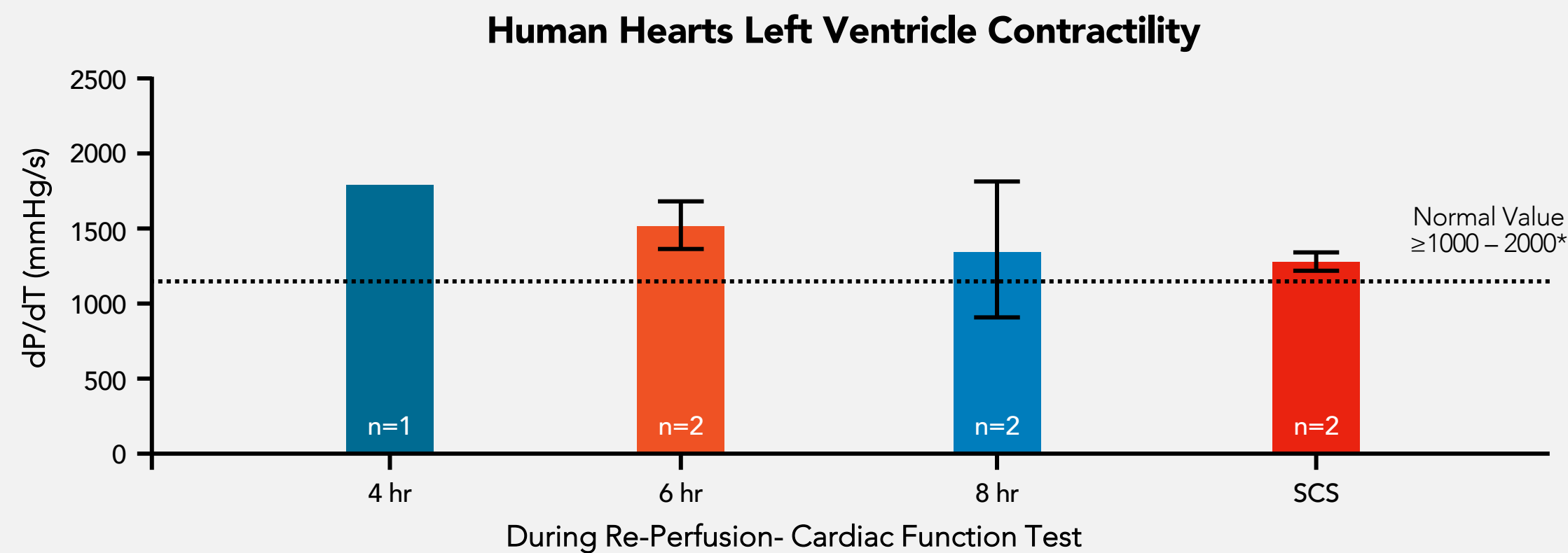
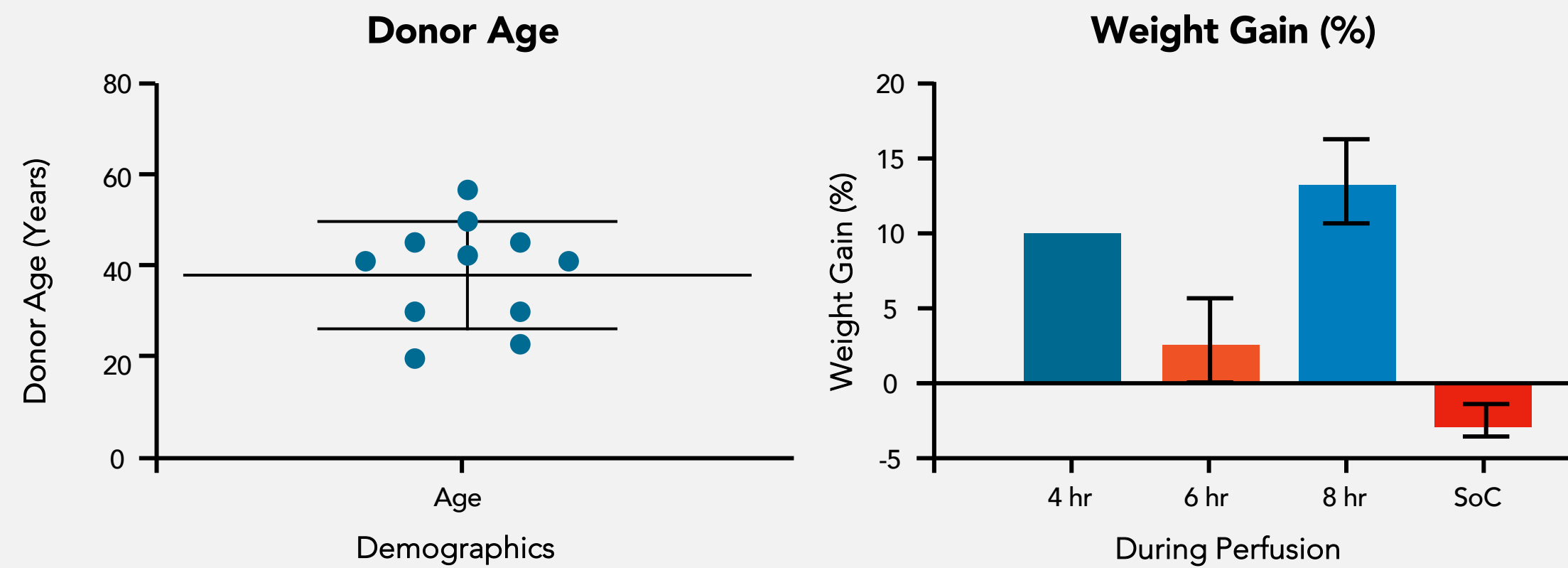
Porcine Hearts Left Ventricular Contractility



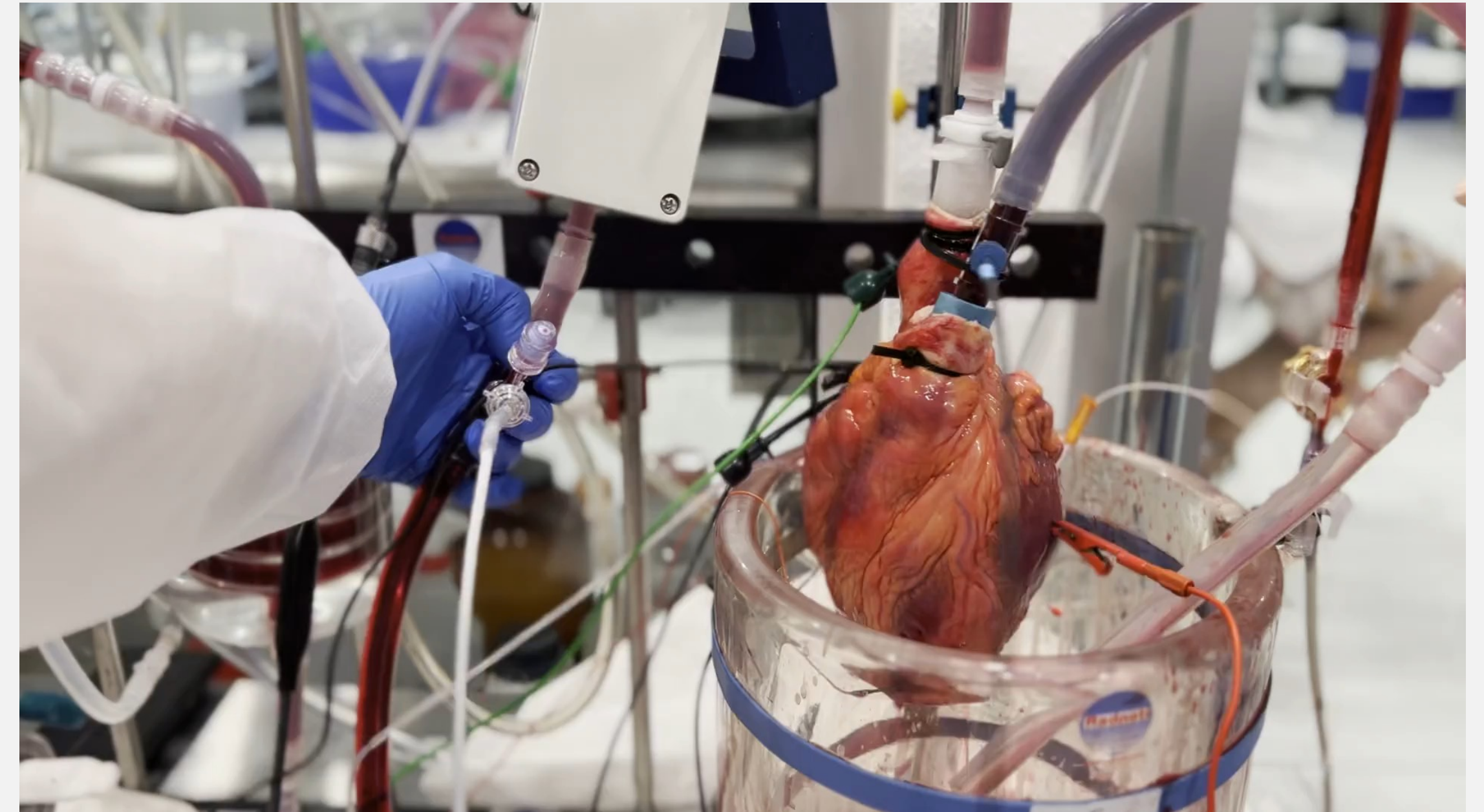
*p < 0.05

VP.S ENCORE® Preserved Human Hearts Suitable for Transplant

Human Heart Data

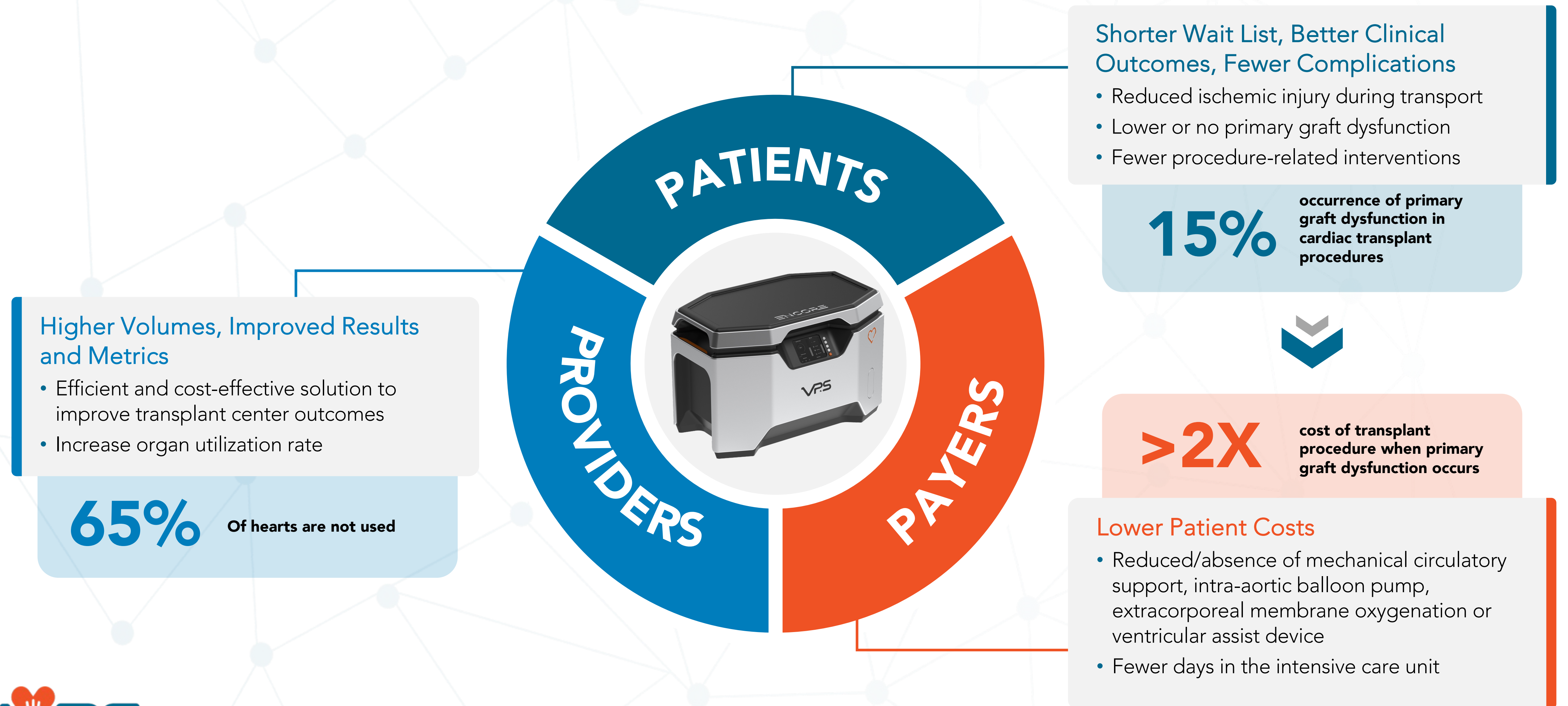


VP.S ENCORE® Heart on Langendorff Apparatus

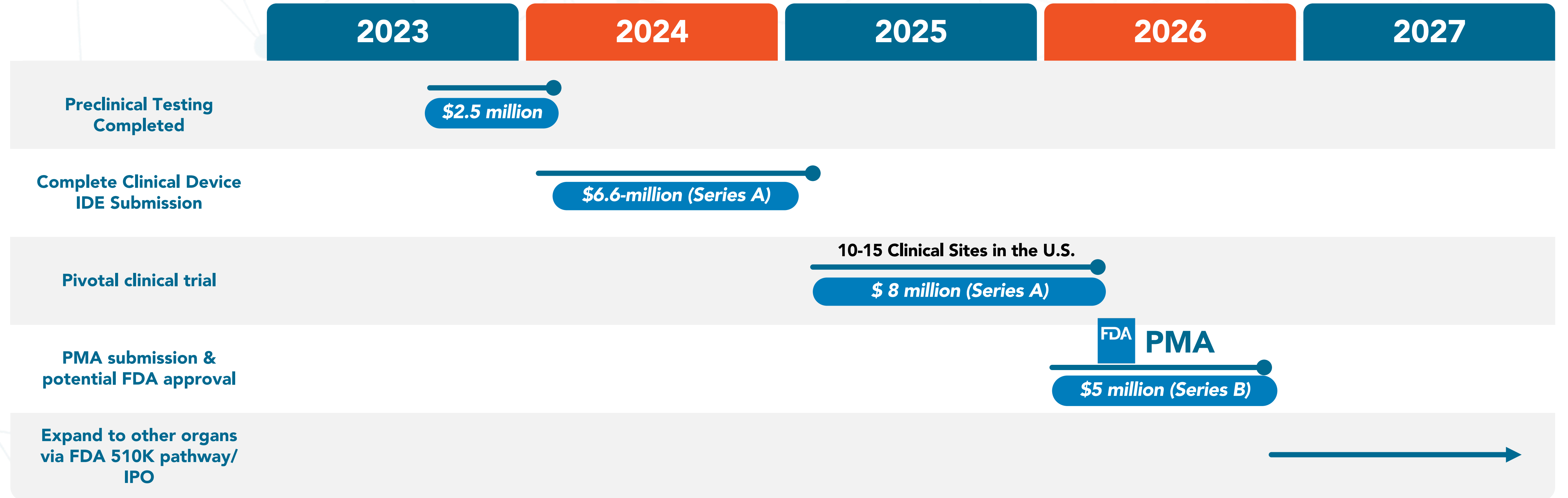


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Delivering Value to Patients, Providers and Payers



U.S. Pathway to FDA Approval and Organ Expansion



Estimated Funding Requirements to Achieve Key Milestones		DARPA & ARPA-H Non-Dilutive Funding	
\$8.2 million raised to date SAFE \$1.4M/\$2.5M (Jan 2024)	Series A targeting \$15 million	\$1.3 million in 2023-24	Next-generation perfusate to further extend preservation times

Use of Proceeds Series A \$15M

2024

2025

Q1

\$500K

ENCORE: Prototype Evaluation- User Input and Performance Testing

\$2.5M

IDE Approval and Clinical Trial Start-up Costs (Start with 2 sites)
Support Manufacturing and Supply Chain

Q2

\$1.5M

ENCORE: Implement User-Centric and Performance Design Changes
Initiate Device Build and Documentation

\$2.5M

Enroll 8 sites
Initiate Design Enhancements for Commercial Encore

Q3

\$2.3M

ENCORE: Receive Builds/Initiate Formal FDA Testing

\$1.5M

Clinical Trial Expenses and Operating Costs/Commercial
Continue Design Enhancements

Q4

\$2.3M

ENCORE: Complete Formal FDA Testing
/ Complete Technical file documentation and FDA Clinical submission

\$1.5M

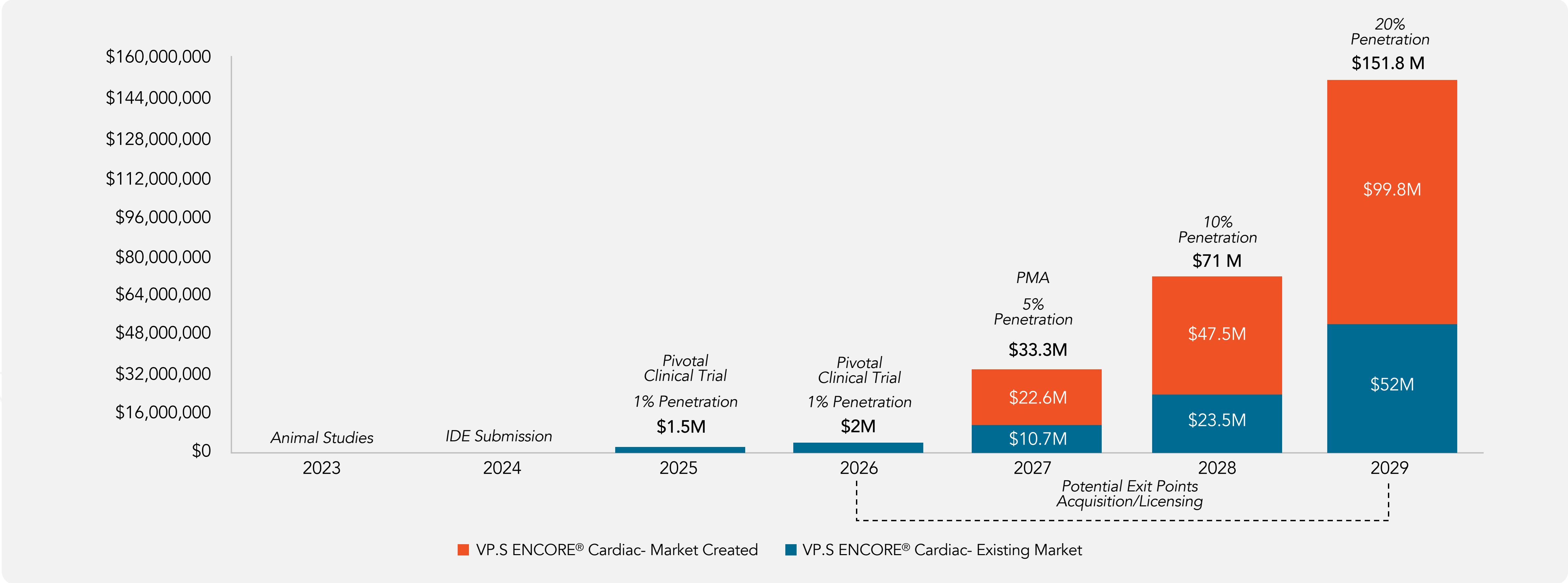
Continue with Clinical Trial
Continue Design Enhancements. Freeze Design Based on Clinical Trial Timing

\$6.6M

\$8M

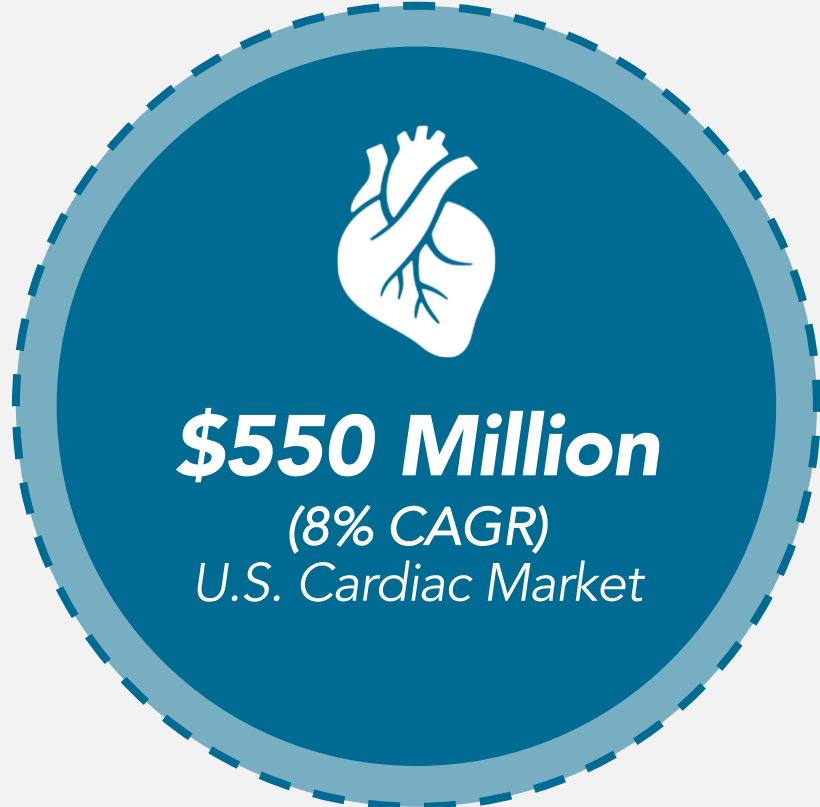
Our Expected Growth Device Projected Revenue

VP.S ENCORE® Cardiac Device Revenue Projections- U.S Only



Line of Sight to >\$1 Billion Market Opportunity

Initial Market Opportunity

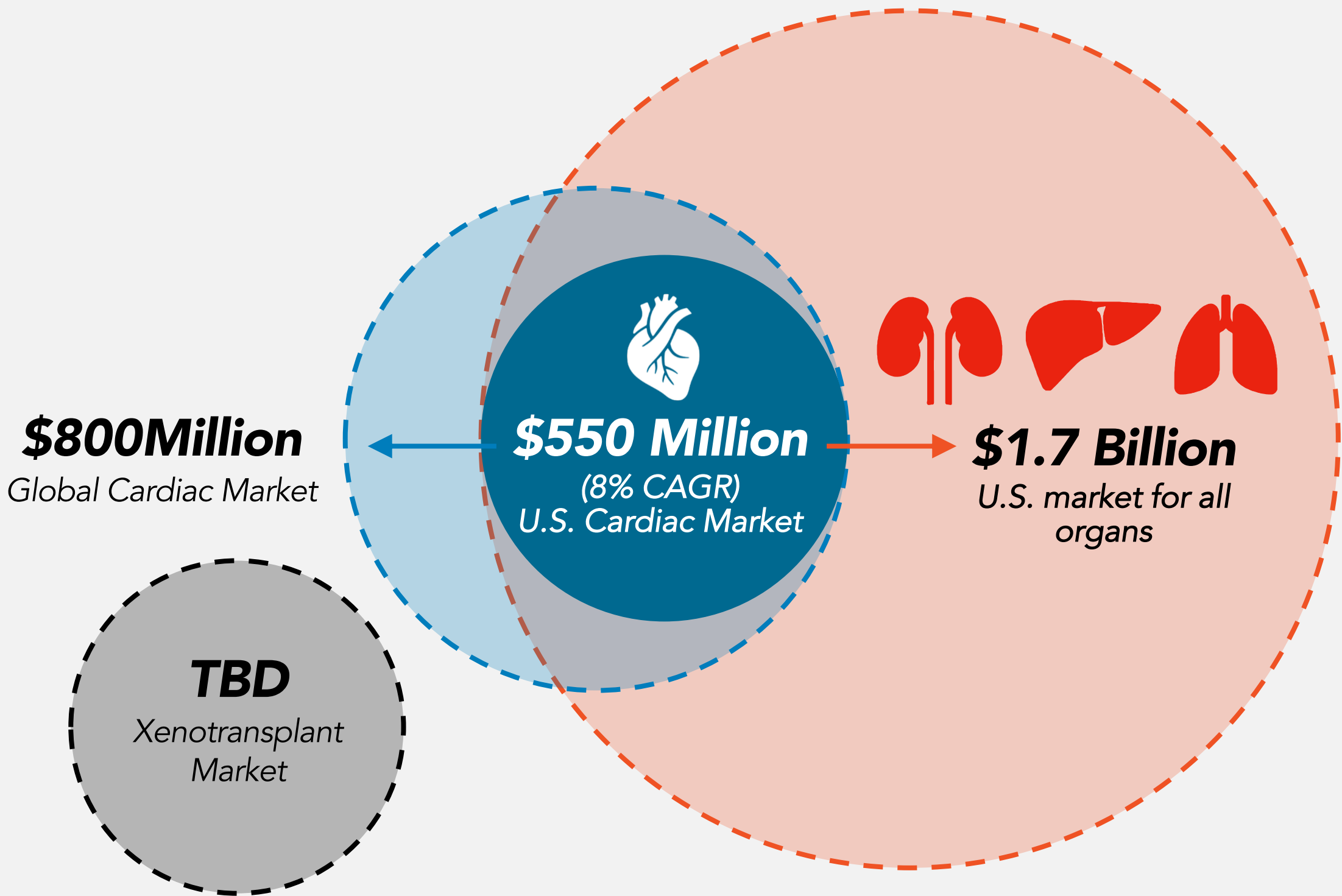


13,703 available donor hearts in 2022

Only ~30% were used

Potential to accelerate market growth with VP.S ENCORE®

Future Market Opportunity



Compelling Commercial Model



Focused U.S. customer base

- 35 major cardiac transplant centers
- 57 organ procurement organizations



Attractive customer economics

- Improve outcomes at lower cost
- Increase transplant volume
- Strengthen quality metrics



High revenue growth potential

- Reimbursed for clinical trial procedures
- Positioned to take share from existing market
- Opportunity to expand the market due to longer preservation times



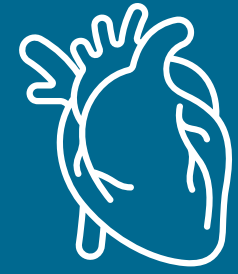
Operating leverage and TAM expansion

- Additional transplant indications (kidney, liver, lung)
- Global expansion
- 80%+ gross margin at scale

Collaborations



Pipeline and Non-Dilutive Funding Projects



Novel Perfusate At Room Temperature

- Testing hibernating compounds to preserve hearts at room temperature without the need of ice
- VPS has exclusive access to IP for novel hibernating compounds from Harvard
- \$1.3M in Grants

WYSS INSTITUTE



ENCORE® Pediatric Indication

- No pediatric heart preservation device in the market
- Gentle perfusion with ENCORE
- Interest from major PEDS centers
- Initial grant awarded \$25K



Ex-vivo Gene editing Partnerships

- Proof of concept data for viral vector delivery during perfusion.
- siRNA delivery during perfusion proof-of concept



Industry Partners



AI + RNAseq Novel Perfusates to decrease Rejection

- Initial partnership with AI Techbio company to explore heart perfusion data to identify potential targets of endothelial activation to reduce rejection.
- Grants for endothelial activation- Proprietary Perfusates





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rafa@vascularperfusion.solutions

