

Health innovation that matters

### LivaNova Investor Day

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TRANSCATHETER MITRAL VALVE REPLACEMENT (TMVR)



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## We are in a leadership position in TMVR



CUSTOMERS	DIS	EASE STATE	MARKET
Interventional cardiologists Cardiac surgeons Echocardiographers	Mitral He	regurgitation art failure	Potential to become 2-3 times the size of Transcatheter Aortic Valve Replacement (TAVR)

# Mitral Regurgitation (MR) is a reliable predictor of health outcomes, including mortality

#### SAVE sub study, n=727

Cardiovascular survival



#### 16 days after Q-wave MI, n=303, 194 with IMR

Survival, %



### "Mild MR is an independent predictor of post-MI mortality."

Lamas et al: Circ, 1997;96:827

"The mortality risk is related directly to the degree of IMR."

Grigioni et al: Circ, 2001;103:1759

# Surgical treatments are imperfect, creating opportunity for new interventional approaches

Established <b>Surgical</b> (open chest)	Repair	"Gold standard"	Challenging surgery, 30%+ recurrence	0
	Replace	Excellent mechanical durability	Lifetime anticoagulation, poor tissue durability	
Emerging	Repair	Strong safety	Modest efficacy, 30%+ recurrence after 1 year	
(percutaneous)	Replace	Open race for TMVR le outcome and ease	eadership. Best clinical of use will be key.	

## LivaNova TMVR Concept



### Delivery System

- Completely transvenous percutaneous approach
- 2-step implant
- Fully reversible

### Anchor

- 4 sub-annular anchoring feet
- SAM management feature
- Nitinol self-expanding frame
- Covered with polyester and ePTFE

### • Valve

- Porcine pericardium
- 3 leaflet circular valve, EOA>3.0cm<sup>2</sup>
- D-shaped outer stent
- Nitinol self-expanding





### LivaNova TMVR Animation

# TMVR is giving new hope to patients with little to no other options

Female (79%), ~79 years old, generally too sick for surgery

Severe MR	Grade 3-4	100%
Heart disease	CAD	64%
	Previous procedure	55%
Heart failure	NYHA III/IV	81%
Pulmonary dysfunction	COPD	46%
Kidney disease	Renal insufficiency	46%



**LIVANOVA** CAD = Coronary Artery Disease; NYHA = New York Heart Association; COPD = Chronic Obstructive Pulmonary Disease

# TMVR advantages have recently created significant interest from leading players

LivaNova	vaNova Caisson Interventional		
Edwards	Internal Fortis development	Not disclosed	
Edwards	CardiAQ Valve Technologies	\$400M	
Edwards	Valtech	\$690M	
🔁 Abbott	Tendyne	\$250M	
🔁 Abbott	Cephea Valve Technologies	Not disclosed	
Medtronic	Twelve Intrepid	\$458M	
Scientific	Option to buy MValve	Reportedly \$200M	

# Key investments to creating a TMVR market that is 2-3 times larger than TAVR



# We have the patience to build and are committed to investing in the market

2025-2030 Expansion into less Country expansion severe patient populations: Additional training of positioning TMVR Pivotal trial: FDA new implanters earlier in the care approval enables 2017 drives therapy continuum Continuing aggressive hiring, ubiquity training and mass engineering General acceptance efforts improve commercial launch Fellowship programs into the MR customer to drive future guidelines and gold experience Multiple competitors Positive first-in-CE Mark adopters standard society human (FIH) supports FIH allowing publish results endorsement validating therapy and early feasibility experience and reliable, Next-generation driving appropriate starts controlled repeatable results systems drive reimbursement results release competitiveness

### **Invest and Protect**

Grow

### Expand

# Executing on a clinical data development plan designed to enable commercialization

		Patients	Centers	Objective	Status
prelude		20	8-10	FIH study proving TMVR concept	Continuing enrollment
interlude		75	15	Confirmatory study to secure CE Mark in Europe	Started to enroll
ensemble	•	400	20-30	U.S. IDE study to build on FIH and CE Mark study to secure FDA approval	Finalizing protocol with enrollment planned in 2019

## A proven approach to ensuring physician competence and confidence

Patient selection	<ul> <li>Therapy awareness tools to drive local education and awareness</li> <li>Joint screening activities with clinical sites</li> <li>Virtual implant fit to ensure proper sizing</li> </ul>
Physician training/tools	<ul> <li>On-site instruction at hospital</li> <li>Full day didactic and hands-on training</li> <li>Modeling of ideal approach for patient case</li> <li>On-site refresher training and virtual implant simulation in actual hospital catheterization lab</li> </ul>
Procedure support	<ul> <li>Expertise for onsite training and case support</li> <li>Procedure observation worksheet on every case to institutionalize learning and continuously improve</li> </ul>

# Competitive advantage in TMVR and opportunity to lead the transseptal market

	LivaNova	Caisson	
TDANGGEDTAL	Edwards	CardiAQ	6000
TRANSSEPTAL	Abbott	Cephea	A CHE
	Edwards	Valtech	
	Edwards	CardiAQ	60-1-00
	Abbott	Tendyne	<u>e</u> 🚱
	Medtronic	Twelve	human
	MValve		-
TRANSAPICAL	Neovasc		1 Cl
	HighLife		
	Sinomed		
	- Direct Flow		<b>S</b>

## Summary: positioning for leadership in TMVR

Technology	<ul> <li>Transseptal delivery</li> <li>Distinct competitive advantages</li> </ul>
Clinical evidence	<ul> <li>Investment in clinical trials</li> <li>Post-market studies for reimbursement and/or expanded indications</li> </ul>
Physician focus	<ul> <li>Collaboration and responsiveness</li> <li>World-class training</li> <li>Procedural support</li> <li>Podium presence</li> <li>Advocacy</li> </ul>

# Liva Nova

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