HEALTH TECH 2020 (3.0)

International Participation | B2B pavilion | Seminars | Exhibitions

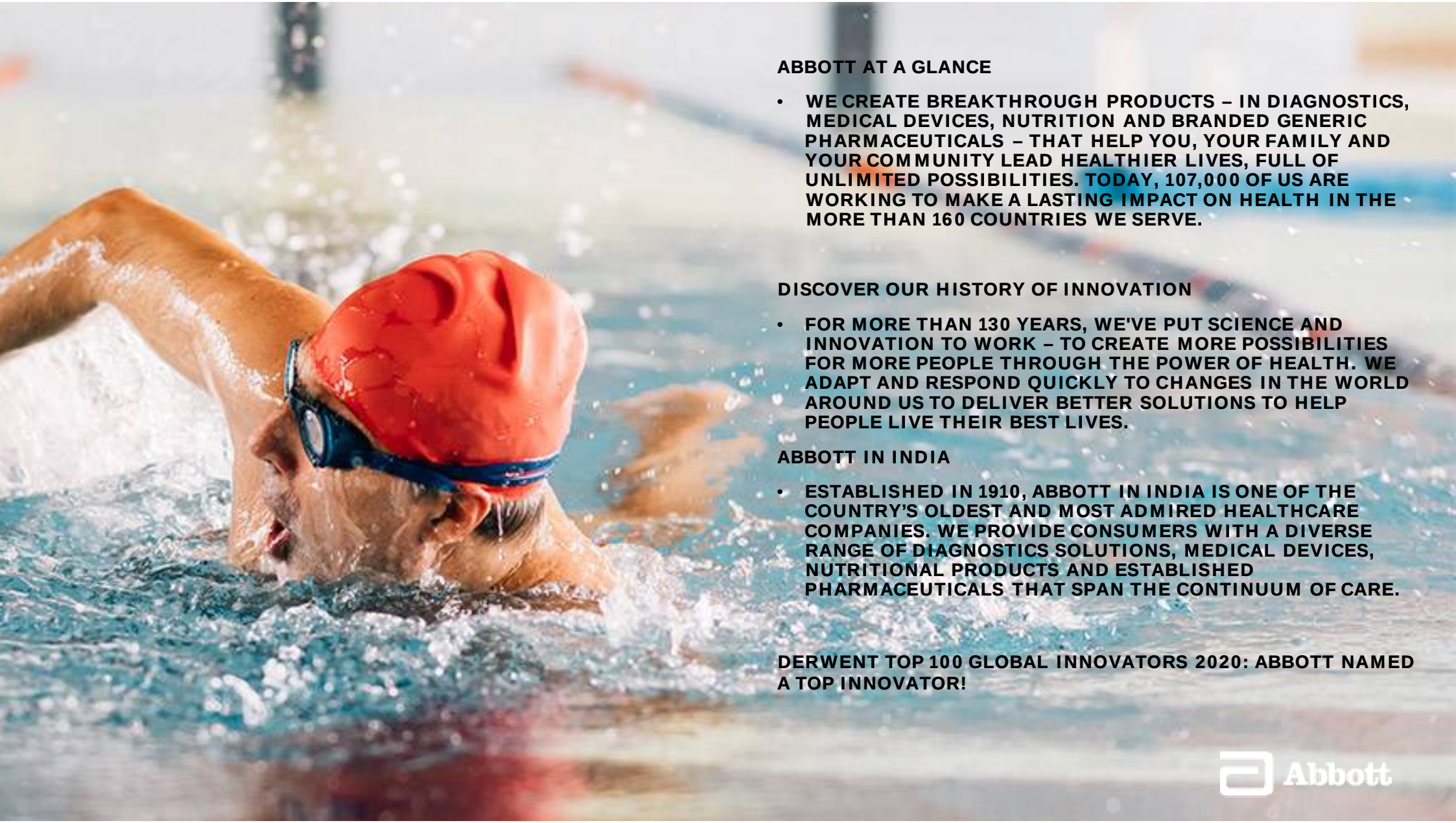
MEDICA Hospitals
caring for life

In association with BCC&I
THE BENGAL CHAMBER

21ST & 22ND FEBRUARY, 2019

VIVANTA KOLKATA EM BYPASS

New Medical Device Technologies in Cardiac Disease Management



ABBOTT AT A GLANCE

- WE CREATE BREAKTHROUGH PRODUCTS – IN DIAGNOSTICS, MEDICAL DEVICES, NUTRITION AND BRANDED GENERIC PHARMACEUTICALS – THAT HELP YOU, YOUR FAMILY AND YOUR COMMUNITY LEAD HEALTHIER LIVES, FULL OF UNLIMITED POSSIBILITIES. TODAY, 107,000 OF US ARE WORKING TO MAKE A LASTING IMPACT ON HEALTH IN THE MORE THAN 160 COUNTRIES WE SERVE.

DISCOVER OUR HISTORY OF INNOVATION

- FOR MORE THAN 130 YEARS, WE'VE PUT SCIENCE AND INNOVATION TO WORK – TO CREATE MORE POSSIBILITIES FOR MORE PEOPLE THROUGH THE POWER OF HEALTH. WE ADAPT AND RESPOND QUICKLY TO CHANGES IN THE WORLD AROUND US TO DELIVER BETTER SOLUTIONS TO HELP PEOPLE LIVE THEIR BEST LIVES.

ABBOTT IN INDIA

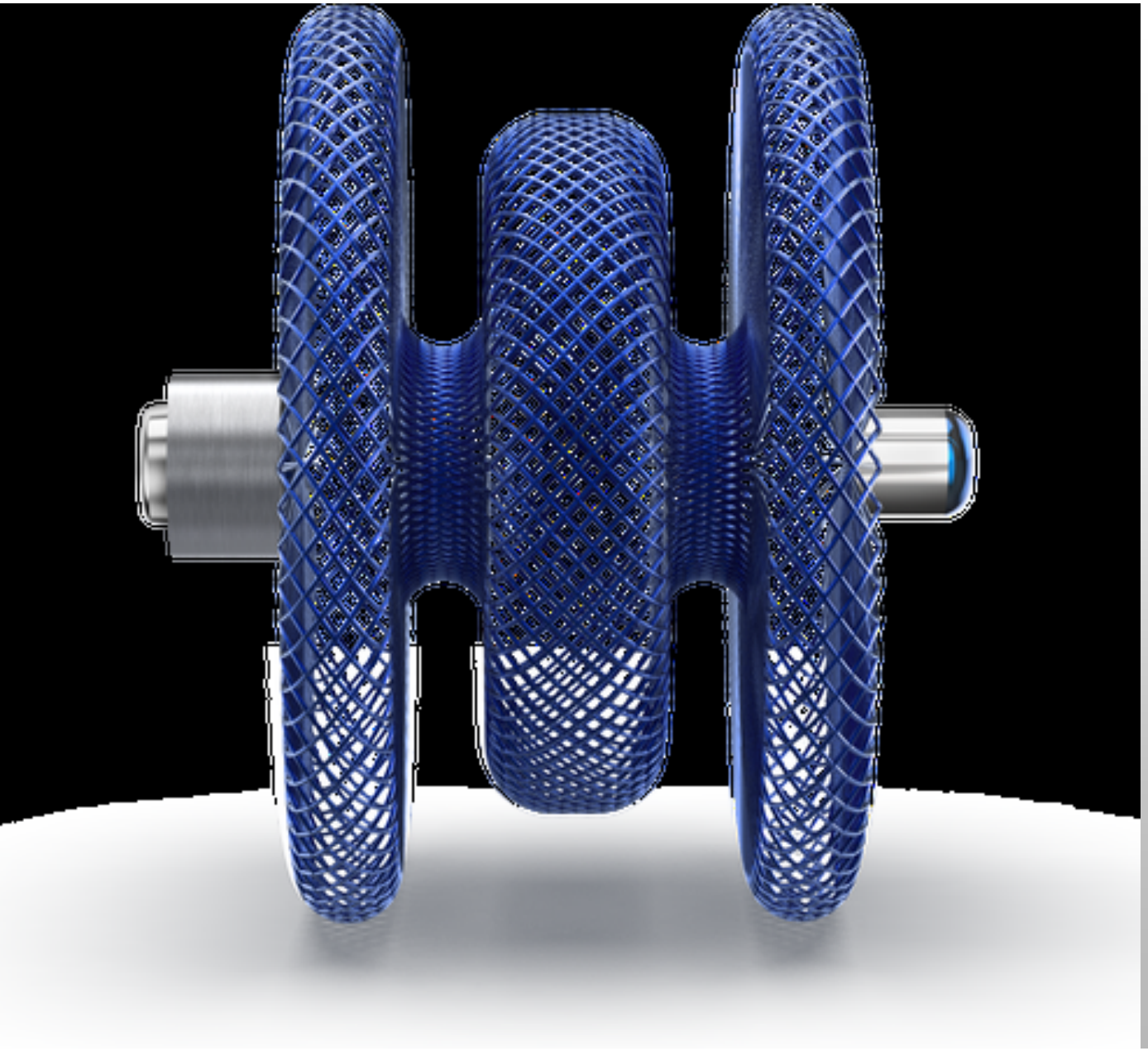
- ESTABLISHED IN 1910, ABBOTT IN INDIA IS ONE OF THE COUNTRY'S OLDEST AND MOST ADMIRED HEALTHCARE COMPANIES. WE PROVIDE CONSUMERS WITH A DIVERSE RANGE OF DIAGNOSTICS SOLUTIONS, MEDICAL DEVICES, NUTRITIONAL PRODUCTS AND ESTABLISHED PHARMACEUTICALS THAT SPAN THE CONTINUUM OF CARE.

DERWENT TOP 100 GLOBAL INNOVATORS 2020: ABBOTT NAMED A TOP INNOVATOR!

Abbott

MITRACLIP™ TRANSCATHETER MITRAL VALVE REPAIR

- BREAKTHROUGH THERAPY FOR SELECT PATIENTS WITH MITRAL REGURGITATION
- MITRACLIP IS THE WORLD'S FIRST TRANSCATHETER MITRAL VALVE REPAIR (TMVR) THERAPY THAT DELIVERS A TREATMENT OPTION FOR SELECT PATIENTS WITH PRIMARY OR SECONDARY MITRAL REGURGITATION WHO WOULD OTHERWISE GO UNTREATED.
- USED IN OVER 80,000 PATIENTS WORLDWIDE, MITRACLIP IS A WELL-ESTABLISHED PROCEDURE WITH A GROWING BODY OF CLINICAL AND REAL-WORLD EXPERIENCE.
- NOW APPROVED IN THE U.S. FOR TREATMENT OF SECONDARY MR IN SELECT HEART FAILURE PATIENTS WHO REMAIN SYMPTOMATIC DESPITE GDMT



AMPLATZER ™ PICCOLO

- THE WORLD'S FIRST DEVICE THAT CAN CLOSE A HOLE IN EVEN THE TINIEST OF HEARTS.
- CLOSING A HOLE IN THE MOST FRAGILE OF HEARTS
- EVERY BABY IS BORN WITH A HOLE IN THEIR HEART. THIS BLOOD V ESSEL, CALLED THE DUCTUS ARTERIOSUS, ALLOWS THEM TO RECEI VE OXYGENRICH BLOOD FROM THEIR MOTHER WHILE IN THE WO MB. AFTER BIRTH, THE HOLE SHOULD NATURALLY CLOSE OVER THE FIRST FEW DAYS OF LIFE, LETTING THE LUNGS AND HEART TAKE O VER. BUT FOR THOUSANDS OF BABIES EACH YEAR, THE HOLE DOES N'T CLOSE PROPERLY —
  KNOWN AS A PDA (PATENT DUCTUS ARTERIOSUS). WHEN THAT H APPENS, IT CAN THREATEN THEIR ALREADY FRAGILE LIFE AND BECO ME A HOUSE OF CARDS.
- A PDA IS PRESENT IN APPROXIMATELY1 IN 2,000 BIRTHS
- PDA RISK IS CONSIDERABLY HIGHER 20-60 % IN PRETERM BABIES
- BREAKTHROUGHS, THAT'S ALSO ONE OF THE SMALLEST
- SOMETIMES SOLVING THE BIGGEST CHALLENGES MEANS THINKIN G SMALL – VERY SMALL.
- AT NO BIGGER THAN A PEA, OUR AMPLATZER ™ PICCOLO IS ONE OF THE SMALLEST HEART DEVICES EVER. MOST IMPORTANTLY, PICC OLO IS THE FIRST U.S. APPROVED DEVICE SMALL ENOUGH TO CLO SE A HOLE IN THE HEART OF A PREMATURE INFANT WEIGHING AS LITTLE AS 700 GRAMS (ABOUT 1.5 POUNDS). AND BECAUSE PICCO LO IS A MINIMALLY-
  INVASIVE DEVICE, IT CAN ELIMINATE THE NEED FOR RISKIER SURGER Y.
- A BREAKTHROUGH THAT FOR THOUSANDS OF FUTURE NEWBORN LIVES, WILL KEEP OPEN A LIFETIME OF POSSIBILITY.

PERCUTANEOUS TRANSCATHETER OCCLUSION OF THE LEFT ATRIAL APPENDAGE (LAAO)

- REAL-WORLD STUDY RESULTS SUPPORT USE OF ABBOTT'S AMPLATZER™ AMULET™ TO REDUCE STROKE IN PATIENTS SUFFERING FROM ATRIAL FIBRILLATION WITHOUT THE NEED FOR LIFETIME BLOOD THINNERS
- - STUDY CONFIRMS SAFETY OF TREATMENT WITH AMPLATZER AMULET DEVICE AND REDUCTION IN STROKE RISK BY NEARLY 60 PERCENT
- - POST-IMPLANT, AMPLATZER AMULET SUCCESSFULLY SEALED LEFT ATRIAL APPENDAGE IN 99 PERCENT OF PATIENTS
- - IN PATIENT POPULATION AT HIGH RISK FOR STROKE – AND MAJOR BLEEDING – NEED FOR BLOOD-THINNING MEDICATION REDUCED

Comprehensive HF Solutions

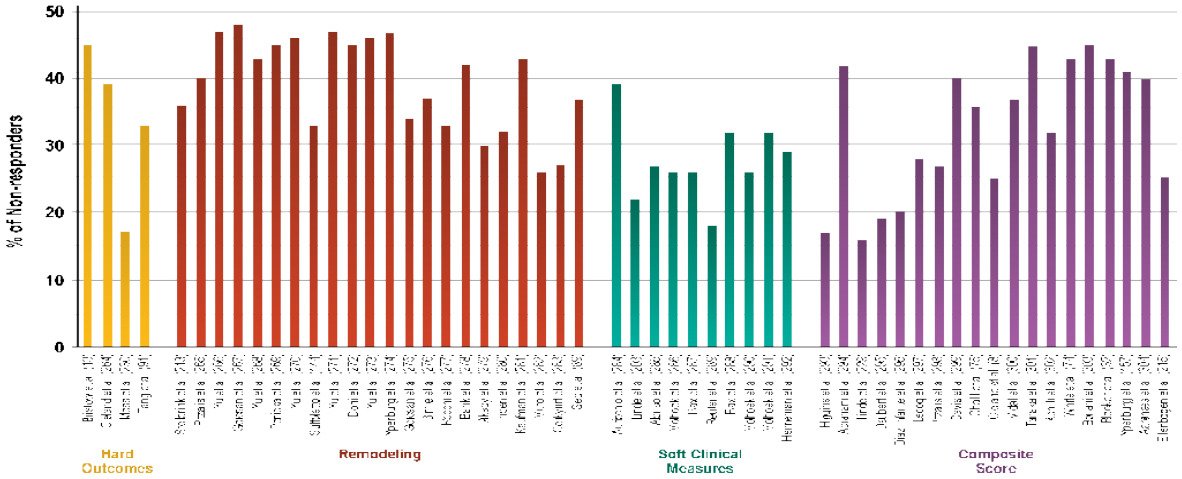
A continuum of care from asymptomatic to refractory.

Rx → ICDs → CRTD/CRTP → ECLS Acute MCS → LVAD → HTx

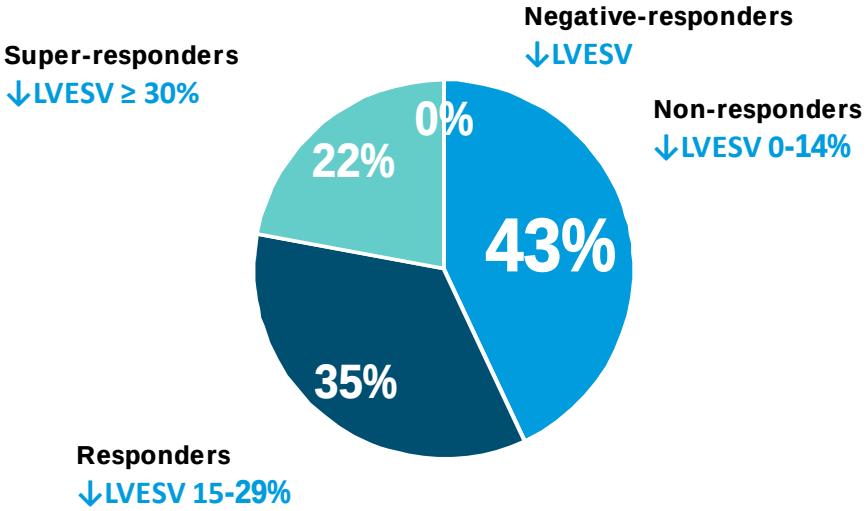
- Pioneering and establishing standards.
- Developing Internal protocols to manage HF patients
- Mining insights to get ahead of adverse events.
- Reducing hospitalizations, lowering cost.

Challenge: CRT-Response

RESPONSE TO CRT IS INADEQUATE AND UNPREDICTABLE[1]



REPRESENTATIVE EXPERIENCE[2]



43% of CRT patients classified as non-responders or negative-responders by LVESV after 6 months (N = 303)

1. Daubert, J.C., Saxon, L., Adamson, P.B., Auricchio, A., Berger, ... Torp-Pedersen, C.T. (2012). 2012 EHRA/HRS expert consensus statement on cardiac resynchronization therapy in heart failure: implant and follow-up recommendations and management. Europace, 14(9):1236-86.

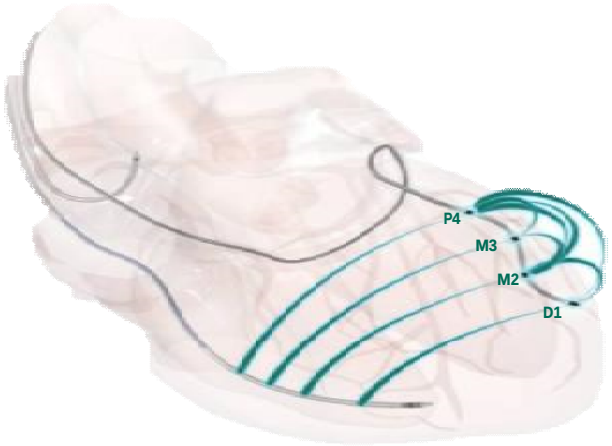
2. Ypenburg, C., Bommel, R. J., Borleffs, C. J., Bleeker, G. B., Boersma, E., Schalij, M. J., & Bax, J. J. (2009). Long-Term Prognosis After Cardiac Resynchronization Therapy Is Related to the Extent of Left Ventricular Reverse Remodeling at Midterm Follow-Up. Journal of the American College of Cardiology, 53(6), 483-490. doi:10.1016/j.jacc.2008.10.032.

23003-SJM-MLP-0516-0061(1) | Item approved for U.S. use only.

From multisite to Multi-Point Pacing (MPP)

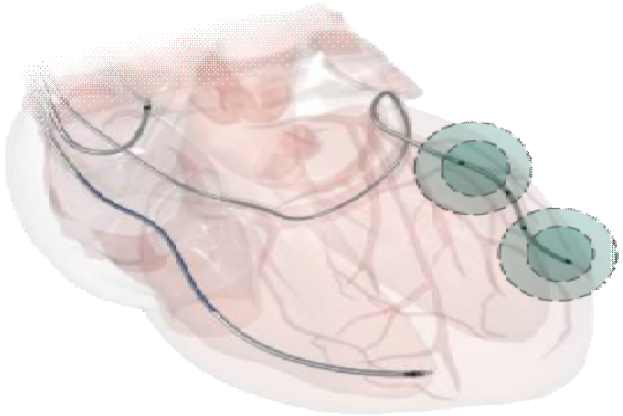
- Faster depolarization along longitudinal direction of myocardial fibers
- Capture a larger area of myocardium
- Capture more tissue around areas of scar
- Better resynchronization
- Better hemodynamics
- Better remodelling
- Better response

SINGLE SITE PACING



Unipolar or bipolar cathodal stimulation from 1 LV electrode

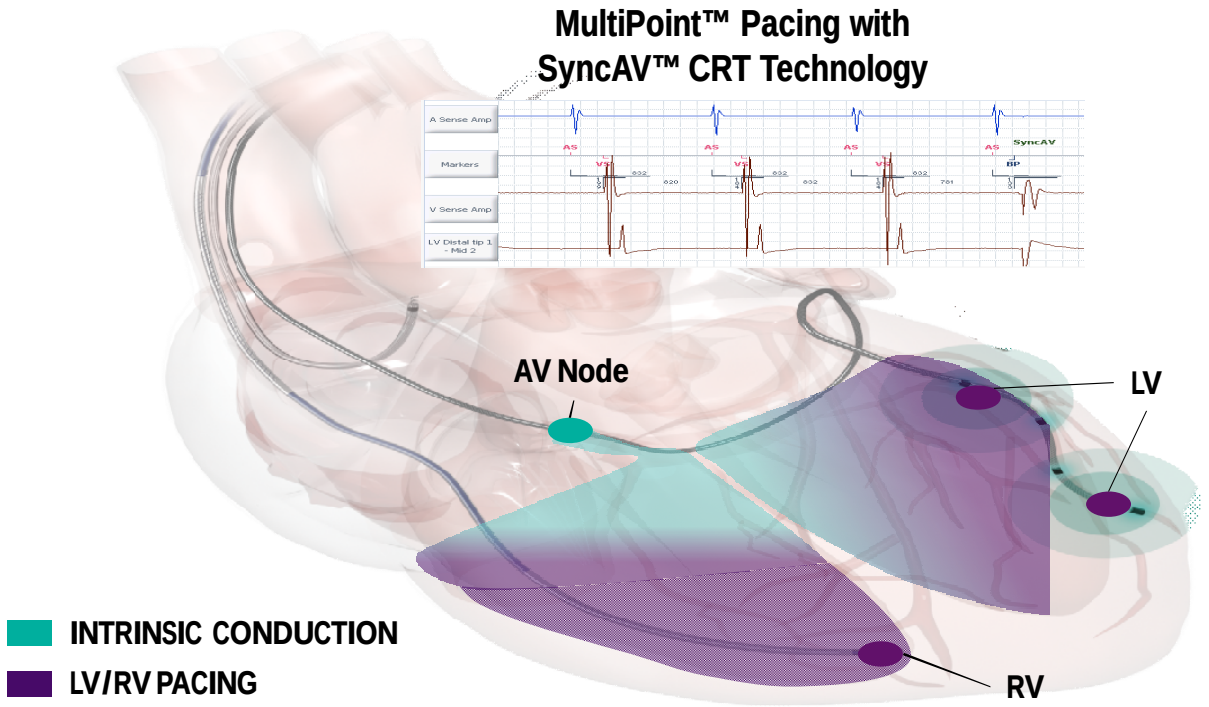
MULTIPOINT™ PACING



Unipolar or bipolar cathodal stimulation from 2 separate LV electrodes

SyncAV™ CRT Dynamically Tailored to the Patient's Beat[1]

- New dynamic timing feature for quadripolar CRT devices
- Individualize and dynamically adjust timing (AV Delays) based on intrinsic patient rhythm
- Drive fusion with intrinsic rhythm for improved electrical synchrony and narrower QRS[1]
- Can complement Multipoint™ Pacing



1. Wisnoskey BJ, Cranke G, Cantillon DJ, and Varma N. (2016). Feasibility of Device-Based Electrical Optimization via Application of the Negative AV Hysteresis Algorithm during Cardiac Resynchronization Therapy (CRT).

Merlin.net Clinical Benefits

Remote monitoring is now recognised as the **standard of care**[1]

The 2015 HRS EXPERT CONSENSUS STATEMENT ON RC recommendations were that remote monitoring represents the new standard of care for patients with ICDs, with alert-driven patient visits replacing most routine office interrogations.

HRS Remote Monitoring Consensus Statement Recommendations

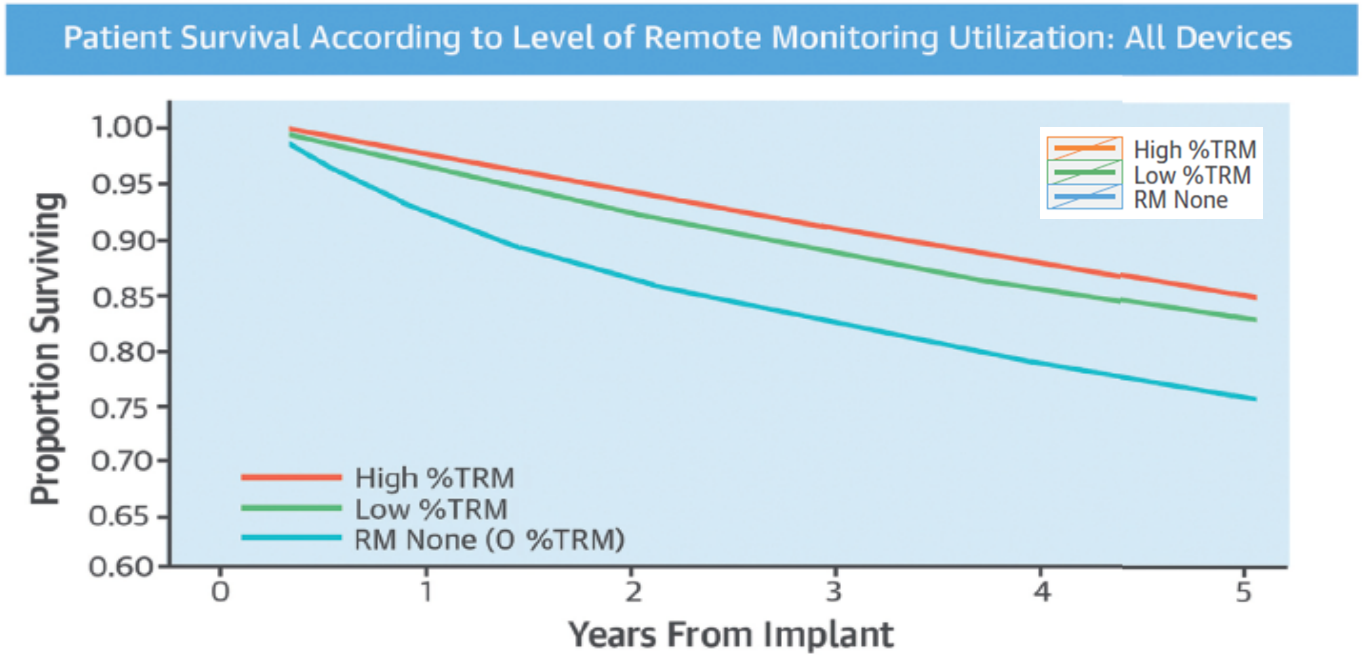
Device Follow-Up Paradigm	Class of Recommendation	Level of Evidence
A strategy of remote CIED monitoring and interrogation, combined with at least annual IPE, is recommended over a calendar-based schedule of in-person CIED evaluation alone (when technically feasible).	I	A
All patients with CIEDs should be offered RM as part of the standard follow-up management strategy.	I	A
RM should be performed for surveillance of lead function and battery conservation.	I	A
RM is useful to reduce the incidence of inappropriate ICD shocks.	I	B-R*
RM is useful for the early detection and quantification of atrial fibrillation.	I	A

1. Slotwiener, D. et al, HRS Expert Consensus Statement on remote interrogation & monitoring for cardiovascular implantable electronic devices, Heart Rhythm Society, May 13 2015
* B-R = level of evidence B indicates a moderate level from randomised trials

Merlin.net Clinical Benefits

2.1x greater survival probability for patients utilising remote monitoring vs. those without monitoring[2]

Survival rates shown from the 269,471 patient study were all from using the **SJM Merlin.net Patient Care Network** with RF telemetry for SJM CRTs, ICDs and PPMs. The degree of adherence to remote management correlated strikingly with the magnitude of survival gain with weekly adherence to remote monitoring of >75% exhibiting the best survival.



2. The Relationship Between Level of Adherence to Automatic Wireless Remote Monitoring and Survival in Pacemaker and Defibrillator Patients, Varma N. et al, *J Am Coll Cardiol.* 2015;65(24):2601-2610. doi:10.1016/j.jacc.2015.04.033

ABBOTT INTRODUCES NEXT-GENERATION HEART RHYTHM MANAGEMENT DEVICES IN EUROPE, FEATURING STATE-OF-THE-ART PATIENT APP AND BLUETOOTH CONNECTIVITY

New Gallant™ high voltage devices offer patients and their doctors a smartphone app and Bluetooth connectivity designed to help doctors tailor therapy to a patient's unique clinical needs

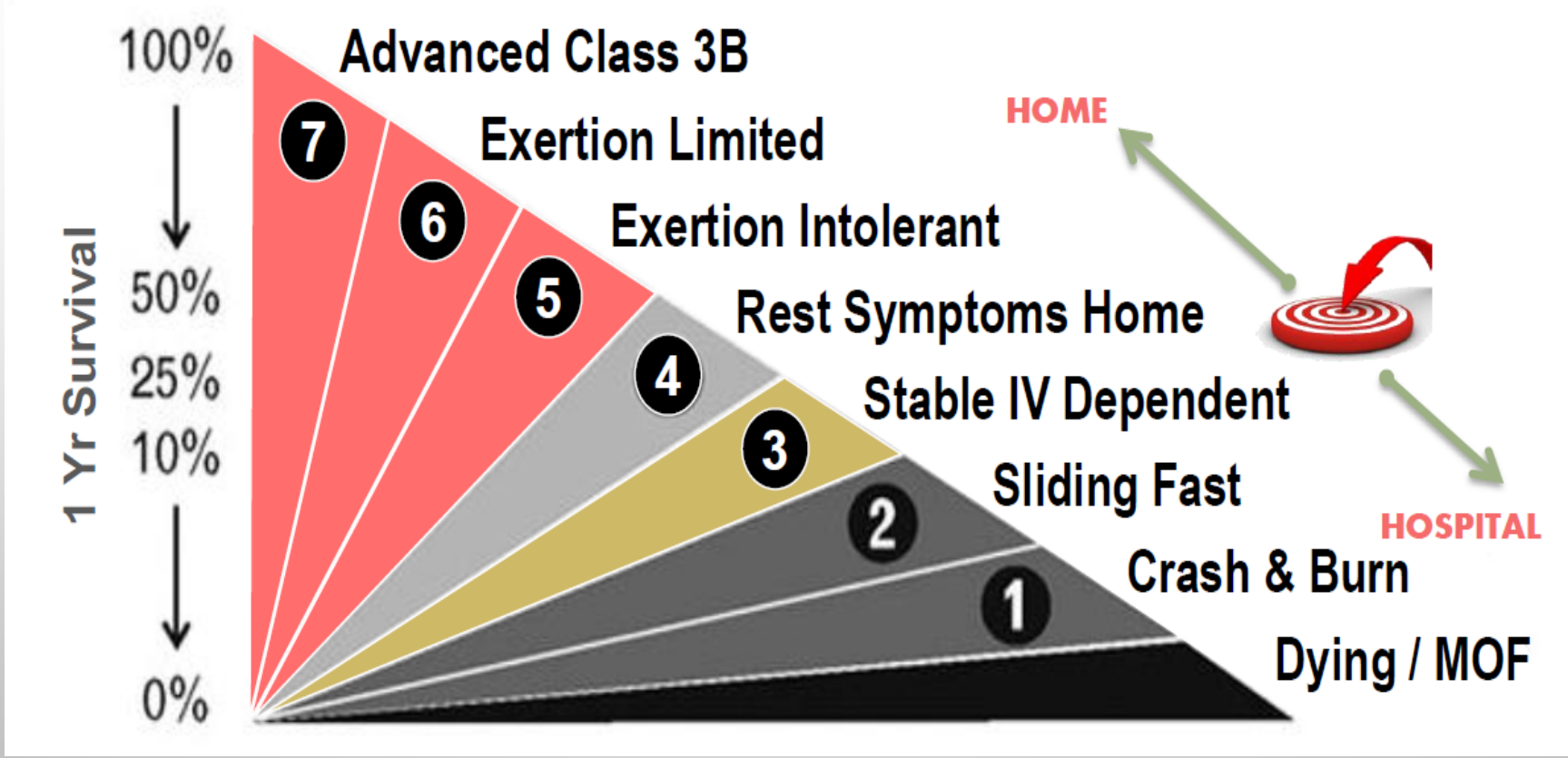
Gallant ICD and CRT-D devices feature a more comfortable design, preferred by patients without compromising on battery longevity or high-voltage output, which remain among the highest in the industry

ADVISOR™ HD GRID MAPPING CATHETER, SENSOR ENABLED™

SEE THINGS DIFFERENTLY.

The Advisor™ HD Grid Mapping Catheter, Sensor Enabled,™ is a steerable, flexible, insulated electrophysiology catheter designed to capture information often missed with traditional 10-pole mapping catheters. Offering a first-of-its kind electrode configuration for high density mapping, the Advisor HD Grid Mapping Catheter, Sensor Enabled pairs with the EnSite Precision™ Cardiac Mapping System for additional display and data options.

INTERMACS - CLASSIFICATION



Evolution : Technology

HeartMate II : Axial flow pump

- Tested – over 1,300 patient clinical trial
  (BTT & DT) and extensive post-market study experience with highly challenging patient populations.
- Only device approved for both BTT & DT by USFDA
- Proven – over 25,000 patients implanted
  - > 600 published, peer-reviewed articles
  - Patient are living with this technology for over a decade

HeartMate 3: Full MagLev Technology

- Implanted in over 10000 Patients Gloally
- Designed for haemocompatibility with the goal of minimizing complications
- Full support (flow) up to 10L/minute at lower pump speeds
- Return of pulsatility into continuous flow profile
- Compact size for less invasive surgical approaches

THE LOWEST HEMOCOMPATIBILITY-RELATED ADVERSE EVENT (HRAE) RATES FOR ANY LVAD[†,††,1-4]

HRAE refers to the constellation of bleeding, stroke and thrombosis events that often aggregate together in the same individual.

10% STROKE[1]

MOMENTUM 3 2019[1]		ENDURANCE 2017[2]	
HeartMate 3™ LVAD (n = 516)	HeartMate II™ LVAD (n = 512)	HVAD‡ LVAD (n = 297)	HeartMate II LVAD (n = 148)
9.9% / 0.08 (% / EPPY)	**19.4% / 0.18** (% / EPPY)	**29.7% / 0.29** (% / EPPY)	**12.1% / 0.09** (% / EPPY)

EPPY = Events per patient-year.

1% THROMBOSIS[1]

MOMENTUM 3 2019[1]		ENDURANCE 2017[2]	
HeartMate 3 LVAD (n = 516)	HeartMate II LVAD (n = 512)	HVAD LVAD (n = 297)	HeartMate II LVAD (n = 148)
1.0%[§]	**11.1%**[§]	**6.4%**[§§]	**10.7%**[§§]

Based on published data from multicenter experience and separate studies, which may involve different patient populations and other variables. Not a head-to-head comparison. Data presented for informational purposes only.

CONFIRM Rx™ ICM
with SharpSense™ Technology

CAPTURING
THE **RHYTHM**
OF LIFE

Confirm Rx: Smart Heart Monitoring via Smartphone

DELIVER CONVENIENTLY

DETECT ACCURATELY

DECIDE CONFIDENTLY

Incision and Delivery Tools

Confirm Rx w/ BLE Header

Patient Smartphone and Activator (iOS or Android)

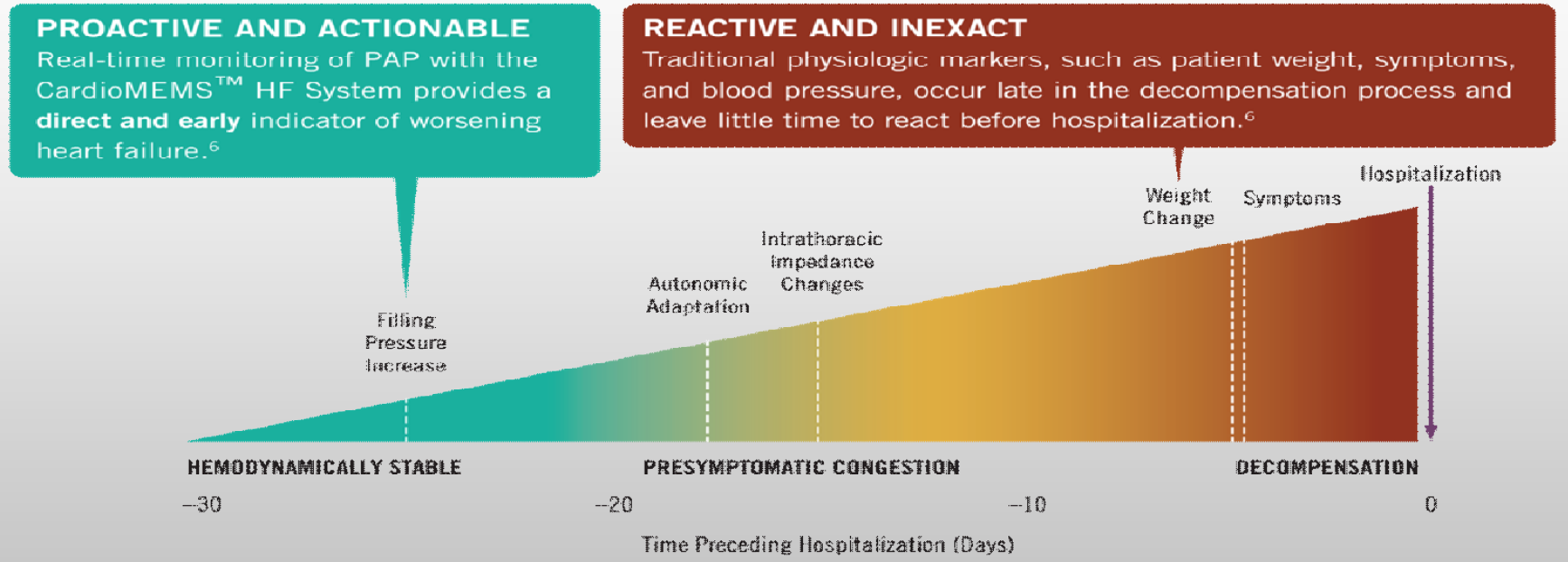
Merlin.net™ PCN

Programming via traditional Merlin programmer w/ BLE Dongle

- SMALL DEVICE (~1.4 CC); 2 YEAR BATTERY LONGEVITY; MR CONDITIONAL
- SIMPLE INSERTION PROCEDURE
- INTUITIVE ONE-TOUCH INDICATION BASED PROGRAMMING VIA TRADITIONAL MERLIN
- AUTOMATIC WIRELESS CONNECTIVITY BETWEEN DEVICE, PATIENT SMARTPHONE AND MERLIN.NET

The CardioMEMS™ HF System takes the guesswork out of Heart Failure Management

Pathophysiology of Congestion and Decompensation



For heart failure patients, avoiding hospitalization is crucial

- After hospitalization, the heart failure prognosis worsens dramatically[7]
  - Mortality has been shown to be 37% 1 year after discharge, 79% at 5 years[8]

CardioMEMS™ HF System implantation and usage is simple, quick, and secure

Sensor inserted via right heart catheterization

Patients take daily sensor reading from the comfort of their home

Data wirelessly transmitted to clinician's website

Clinician reviews data and contacts patient as necessary

HOSPITALIZATIONS REDUCED BY 1/3[1]

18 MONTHS ($p < 0.0001$)

HOSPITALIZATIONS REDUCED BY 1/2[3]

18 MONTHS ($p < 0.0001$)

IMPROVE QUALITY OF LIFE[1]

INCREASE 6-MINUTE WALK DISTANCE[2]

REDUCE HOSPITAL ADMISSIONS*[1]

OPTIMIZE MANAGEMENT, EVEN IN HFpEF[3]

Thank you