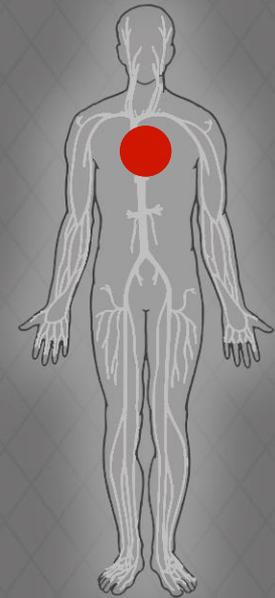




Revolutionizing treatment of advanced heart disease



NASDAQ, TSX: NCVN

Fred Colen, CEO

August 2018

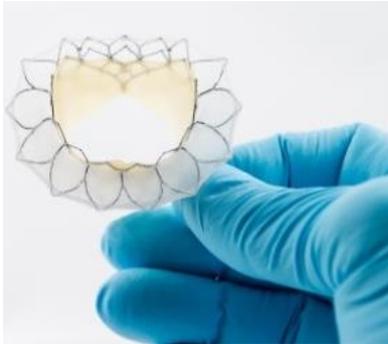
Forward-Looking Statements

This presentation contains forward-looking statements within the meaning of the U.S. Private Securities Litigation Reform Act of 1995 and applicable Canadian securities laws regarding the Company's plans and expectations concerning: the size of the market opportunities for the Tiara and the Reducer; bringing the Tiara to market; enhancing its commercial strategy with respect to the Reducer; its ability to successfully restructure financially and organizationally and to re-establish confidence; its intellectual property coverage for its products; additional TIARA-II study enrolments at new sites and in additional countries; and seeking CE mark approval for the Tiara. Words and phrases such as "revolutionize", "strategy", "initiate", "path" and "re-establish", and similar words or expressions, are intended to identify these forward-looking statements. Forward-looking statements are based on estimates and assumptions made by the Company in light of its experience and its perception of historical trends, current conditions and expected future developments, as well as other factors that the Company believes are appropriate in the circumstances. Such statements reflect management of the Company's current views with respect to future events and are subject to risks and uncertainties and are necessarily based upon a number of estimates and assumptions that, while considered reasonable by the Company, are inherently subject to significant business, economic, competitive, political and social uncertainties and contingencies. The factors and assumptions used by management of the Company to develop such forward-looking statements include, but are not limited to: the Company's ability to continue as a going concern; the Company's ability to raise significant additional financing on favorable terms; the Company's regulatory and clinical strategies will continue to be successful; the Company's current positive interactions with regulatory agencies will continue; recruitment to clinical trials and studies will continue; the time required to enroll, analyze and report the results of the Company's clinical studies will be consistent with projected timelines; current and future clinical trials and studies will generate the supporting clinical data necessary to achieve approval of marketing authorization applications; the regulatory requirements for approval of marketing authorization applications will be maintained; the Company's current good relationships with the Company's suppliers and service providers will be maintained; the Company's estimates of market size and reports reviewed by us are accurate; the Company's efforts to develop markets and generate revenue from the Reducer will be successful; and markets for the Tiara and the Reducer will develop. Investors are cautioned that many factors and assumptions could cause the Company's actual results, performance or achievements to differ materially from those expressed or implied by the forward-looking statements, including, without limitation: the substantial doubt about the Company's ability to continue as a going concern; risks relating to the Company's need for significant additional future capital and the Company's ability to raise additional funding; risks relating to the warrants and notes, offered pursuant to the November 2017 public offering of units and private placement of senior secured convertible notes and warrants (the "Financings"), resulting in significant dilution to the Company's shareholders; risks relating to the possibility that the Company's Common Shares may be delisted from the Nasdaq Capital Market or the Toronto Stock Exchange, which could affect their market price and liquidity; risks relating to it being more expensive for the Company to raise capital in the future and dilution to investors; risks relating to the Company's Common Share price being volatile; risks relating to the sale of a significant number of Common Shares; risks relating to the restrictions on the Company entering into certain transactions; risks relating to the exercise of Warrants or conversion of Notes offered pursuant to the Financings, which may encourage short sales by third parties; risks relating to claims by third parties alleging infringement of their intellectual property rights; the Company's ability to establish, maintain and defend intellectual property rights in the Company's products; risks relating to results from clinical trials of the Company's products, which may be unfavorable or perceived as unfavorable; the Company's history of losses and significant accumulated deficit; risks associated with product liability claims, insurance and recalls; risks relating to competition in the medical device industry, including the risk that one or more competitors may develop more effective or more affordable products; risks relating to the Company's ability to achieve or maintain expected levels of market acceptance for the Company's products, as well as the Company's ability to successfully build the Company's in-house sales capabilities or secure third-party marketing or distribution partners; the Company's ability to convince public payors and hospitals to include the Company's products on their approved products lists; risks relating to new legislation, new regulatory requirements and the efforts of governmental and third party payors to contain or reduce the costs of healthcare; risks relating to increased regulation, enforcement and inspections of participants in the medical device industry, including frequent government investigations into marketing and other business practices; risks associated with the extensive regulation of the Company's products and trials by governmental authorities, as well as the cost and time delays associated therewith; risks associated with post-market regulation of the Company's products; health and safety risks associated with the Company's products and the Company's industry; risks associated with the Company's manufacturing operations, including the regulation of the Company's manufacturing processes by governmental authorities and the availability of two critical components of the Reducer; risk of animal disease associated with the use of the Company's products; risks relating to the manufacturing capacity of third-party manufacturers for the Company's products, including risks of supply interruptions impacting the Company's ability to manufacture its own products; risks relating to breaches of anti-bribery laws by the Company's employees or agents; risks associated with future changes in financial accounting standards and new accounting pronouncements; risks relating to the Company's dependence upon key personnel to achieve the Company's business objectives; the Company's ability to maintain strong relationships with physicians; risks relating to the sufficiency of the Company's management systems and resources in periods of significant growth; risks associated with consolidation in the health care industry, including the downward pressure on product pricing and the growing need to be selected by larger customers in order to make sales to their members or participants; the Company's ability to successfully identify and complete corporate transactions on favorable terms or achieve anticipated synergies relating to any acquisitions or alliances; anti-takeover provisions in the Company's constating documents which could discourage a third party from making a takeover bid beneficial to the Company's shareholders; risks relating to conflicts of interests among the Company's officers and directors as a result of their involvement with other issuers; and risks relating to the influence of significant shareholders of the Company over the Company's business operations and share price. These risk factors and others relating to the Company are discussed in greater detail in the "Risk Factors" sections of the Company's Annual Information Form and Management's Discussion and Analysis of Financial Condition and Results of Operations, each of which is included in its Annual Report on Form 40-F, and the Company's Management Discussion and Analysis for the third quarter of 2017 (copies of which filings may be obtained at www.sedar.com or www.sec.gov). These factors should be considered carefully, and readers should not place undue reliance on the Company's forward-looking statements. The Company has no intention and undertakes no obligation to update or revise any forward-looking statements, whether as a result of new information, future events or otherwise, except as required by law.

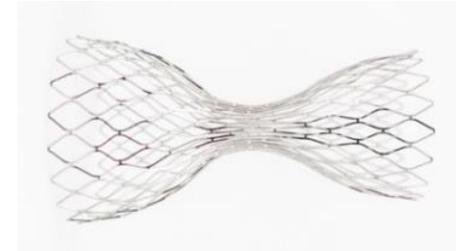
All financial data mentioned is expressed in US dollars.

Two breakthrough products in large Cardiovascular Markets:

Tiara™ Mitral Valve replacement for minimally invasive treatment of mitral valve disease (in Clinical trial phase)



Reducer™ Device for minimally invasive treatment of Refractory Angina (CE-marked and commercial in EMEA)

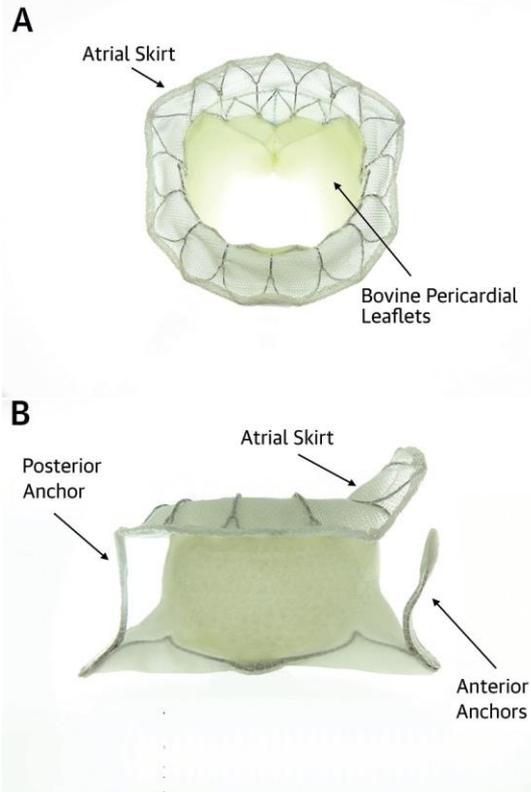


Executing company turn-around strategy:

- Plan to double Reducer implants & revenue in '18 over '17 in EMEA
- Reducer NUB1 status in Germany; >15 German Clinics established re-imburement
- Focus on Tiara path to market: 58 Tiara implants to-date: T1, T2 and Compassionate Use
- Company financial & organizational re-structuring:
 - Leaner organization; ongoing actions to increase efficiency
 - 98% of warrants from last Nov's financing executed
 - Shareholder's approval for reverse stock-split (with hearing scheduled for August 30)
 - Negotiating with convertible debt note holders

Tiara

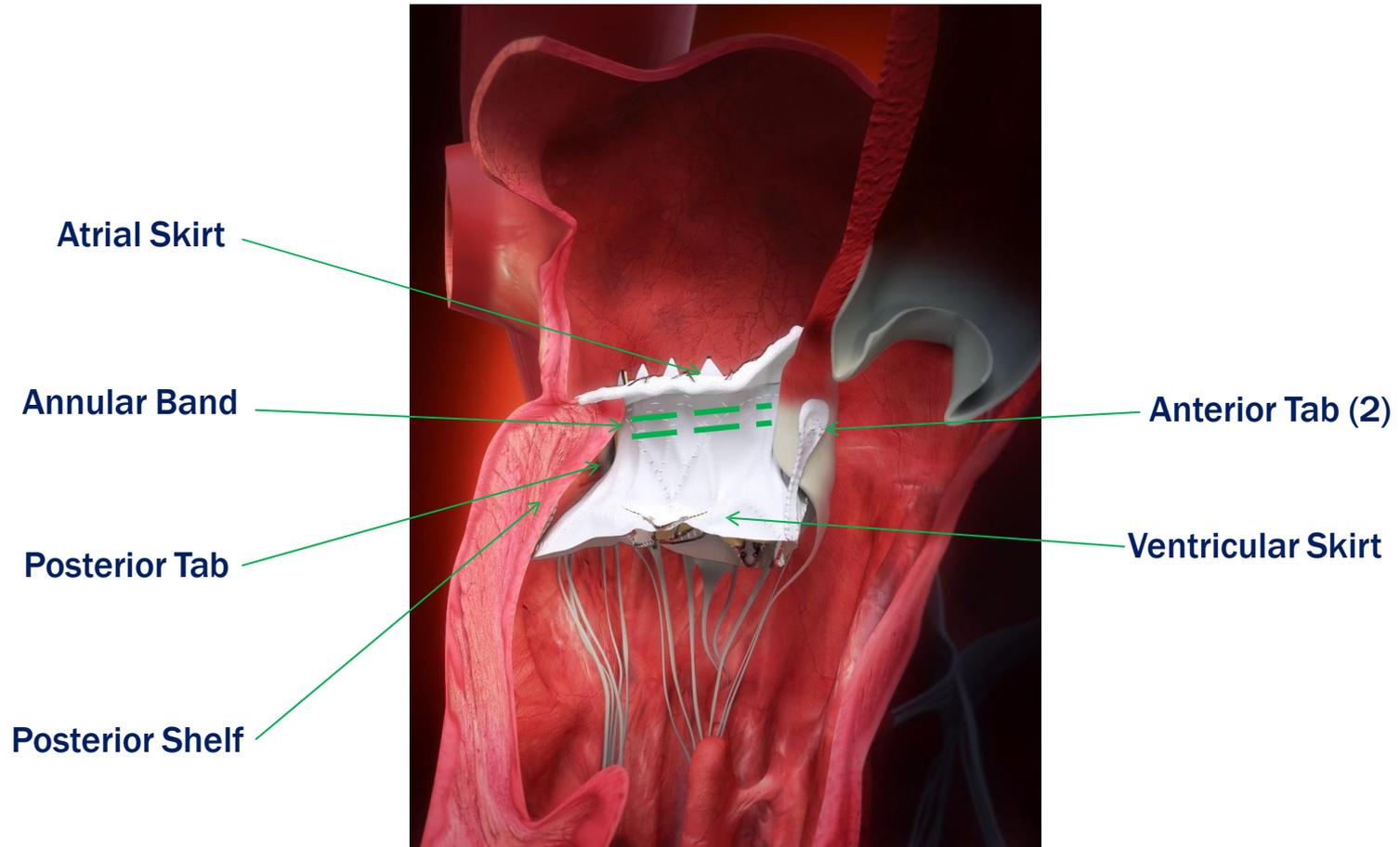
A novel transcatheter Mitral Valve replacement



- Fits anatomical shape of native valve
- Does not obstruct LVOT and preserves LV function
- Simple delivery system with single thumbwheel to control deployment
- Quick and repeatable transapical implantation procedure and well-established, efficient preparation procedure
- 35 mm and 40 mm size in clinical use and CE mark study
- **Trans-septal delivery system under development**
- Device and delivery systems covered by multiple patent applications and issued patents



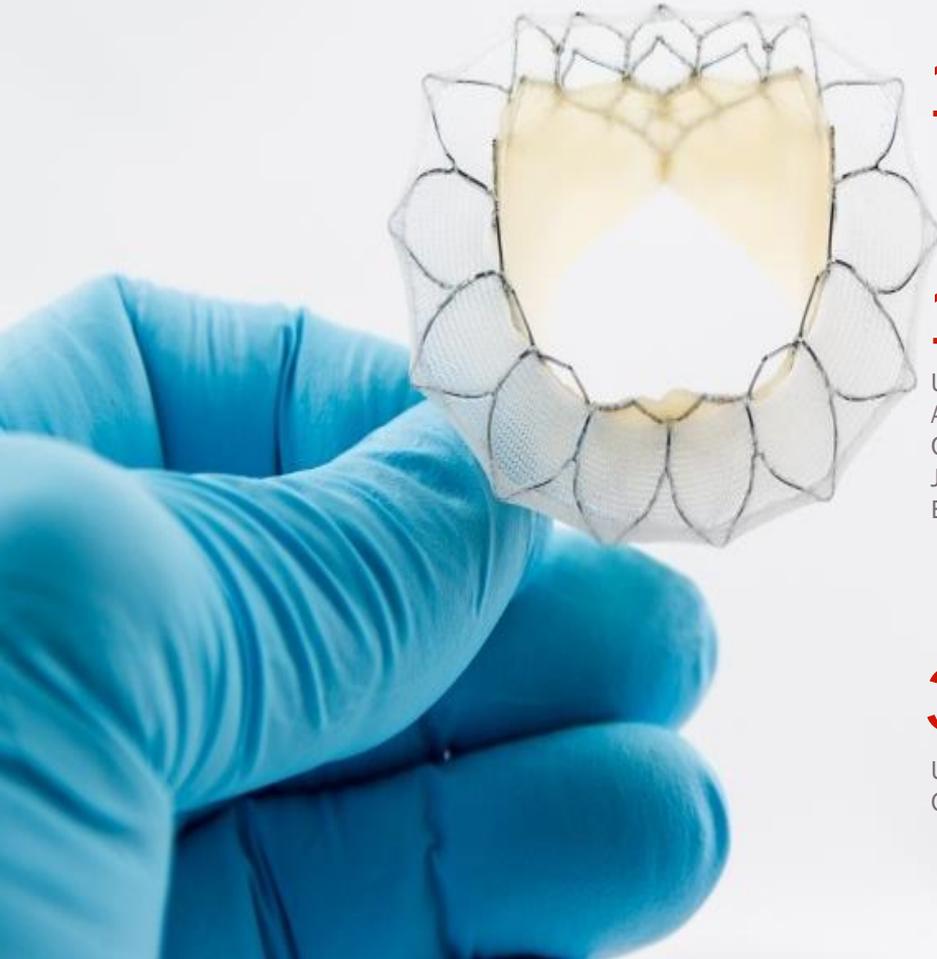
Tiara- Transcatheter Mitral Valve Implantation Design Features



Tiara

Intellectual Property

Comprehensive global patent strategy to cover Tiara and related technologies



10 Active patent families

18 Granted patents

U.S.	10
Australia	1
China	2
Japan	4
Europe	1 (for 10 EU countries)

37 Pending patents

U.S.	10
Other	27

Tiara update

Excellent results from clinical cases

- 58 patients treated to date: (Belgium, Canada, Germany, Israel, Italy, Switzerland, UK and US)
 - 20 in TIARA-I
 - 16 in TIARA-II
 - 22 under Compassionate Use (longest follow-up 4 years)
- Procedure outcomes very encouraging with average implantation procedure time of approximately 20 minutes (Shortest implantation procedure time to-date: 8 minutes)
- Successfully treated patients with all types of Mitral Valve pathologies, and pre-existing prosthetic aortic valves (both mechanical and bioprosthetic) and prior surgical mitral valve repair

	Since 2014	2017	TIARA-II
TREATED	58	21	16
30 Day SURVIVAL RATE	90% (52/58)	95% (20/21)	94% (15/16)

Tiara 30 Day Outcomes (n=58)

Event	N (%)	
Peri-procedural Death	0	*
Cerebrovascular Event	2 (3%)	
Myocardial Infarction	1 (2%)	
Access Site Complication		
-Minor	1 (2%)	*
-Major	3 (5%)	*
Paravalvular Leakage (>1+)	1 (2%)	*
LVOT obstruction	0	*
Acute Kidney Injury	8 (14%)	
Device Migration	2 (3%)	*
Conversion to Open Heart Surgery	3 (5%)**	*
All-cause 30-Day Mortality	6 (10%)	*
Cardiac 30-Day Mortality	4 (7%)	*

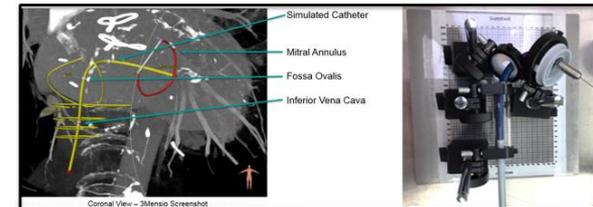
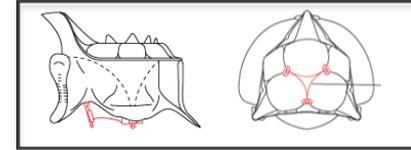
**There have been no conversions to open heart surgery for over 2 years.

Actions to increase TIARA-II enrollment

CE Mark Study

- Qualified and activated 4 new Clinical Investigator sites during July in Germany and Italy
- Additional Clinical Investigator sites planned for activation in August and September in Germany, Spain, Netherlands and Israel
- Qualifying additional Investigator sites up to the max of 20 sites
- Implementing an easy-to-use, Echo based pre-screening tool for the Investigator sites
- Increased the European field clinical engineering support
- Increasing the number of qualifying European proctoring Physicians

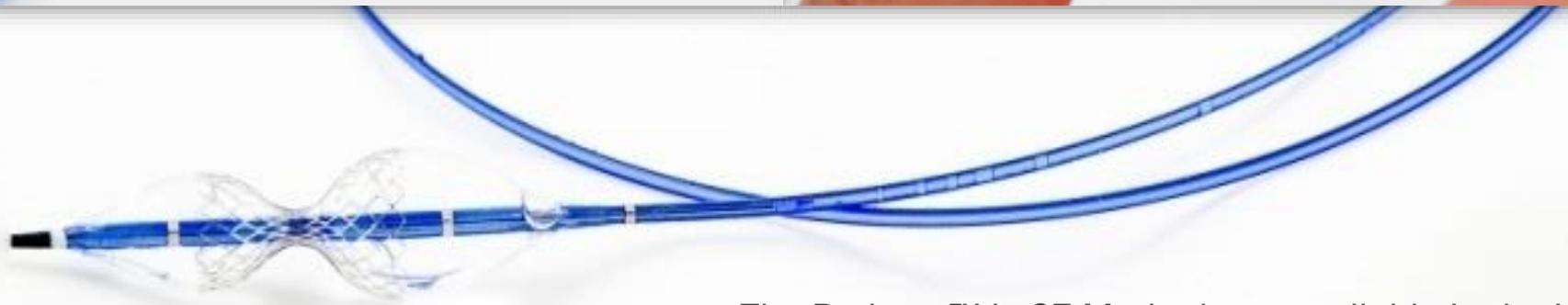
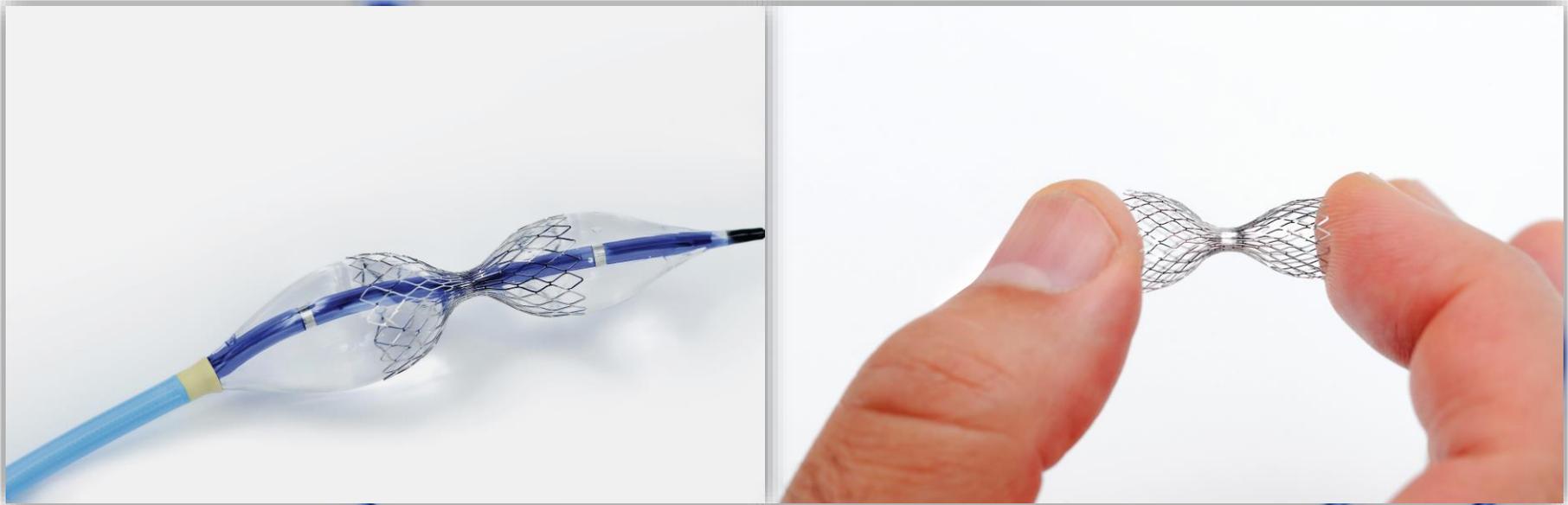
Tiara TF-TS Development Update



- **Incorporating Extensive Clinical Experience of Tiara into TF-TS system:**
 - Transparent implant enhancements that have major impact on **Patient Inclusion & Integration** with a **TF-TS profile Delivery** approach; Primary Design Focus:
 - 1) **Reduced profile & ventricular footprint**, increasing patient inclusion & TF-TS delivery
 - 2) Valve Hemodynamics & Flow Dynamics
 - 3) Deployment Accuracy & Anchoring via the Femoral Vein
 - 4) Valve Durability & Fatigue Resistance
 - 5) TA backwards compatibility option
 - Integrating Visualization Enhancements via ECHO, CT & Fluoroscopy: Prescreening, Intraoperative & Post Implant Assessments
 - Heavily focused on bench assessment(s), acute and chronic animal implants through balance of 2018 and into early 2019 to identify overall Tiara TF-TS Concept to enter full product development cycle
 - Numerous Bench Evaluations: Pulse Duplicator → Simulations
 - N=4 Acute Animals to Date
- **Continuing to build on our strong IP portfolio specific to TF-TS and TA Delivery approaches**
- **Developing strategic partnerships with key Clinicians: Cardiologists / Interventionalists & Surgeons**

Reducer™

**Novel treatment for debilitating Angina Pectoris,
in patients without other treatment options**



The Reducer™ is CE Marked; not available in the USA

Refractory Angina

Introduction

- Chronic angina pectoris, refractory to medical and interventional therapies, is a common and disabling medical condition, and a major public health problem that affects millions of patients worldwide
- Refractory angina is common in:
 - patients who are not good candidates for revascularization
 - patients following successful revascularization (PCI as well as CABG)

1. Mukherjee D, et al: Direct myocardial revascularization and angiogenesis-how many patients might be eligible? Am J Cardiol 1999
2. Rosamond W, et al: a report from the AHA Statistics Committee. Circulation 2008;117:e25-e146
3. Task FM, et al: 2013 ESC guidelines on the management of stable CAD Eur Heart J 2013;34:2949-3003
4. Yang EH, et al: Current and future treatment strategies for refractory angina. Mayo Clin Proc 2004;79: 1284-1292
5. Serruys PW: Re-appraising the significance of residual angina. EuroIntervention 015;10:1253

Incidence and Prevalence of Refractory Angina

- The prevalence of refractory angina pectoris **continues to increase** associated with the aging of the population and the increase in life expectancy of patients with ischemic heart disease
- These “no-option” patients experience severe debilitating angina despite optimal medical therapy
- Data derived from cardiac Cath-lab registries showed that **6-12%** of patients referred to angiography with evidence of ischemia were ineligible for traditional revascularization
- This is equivalent to 90 to 180 patients per year in a center performing 1500 Angiographies

Bernstein SJ, et al: Sweden.SECOR/SBU Project Group. *Heart* 1999;81:470

Brorsson B, et al: *Heart* 2002;87:140

McGillion M: *Can J Cardiol* 2009;25(7):399-401

Mukherjee D, et al: *Am J Cardiol* 1999; 84:598

Williams B, et al: *Catheter Cardiovasc Interv* 2010;75:886

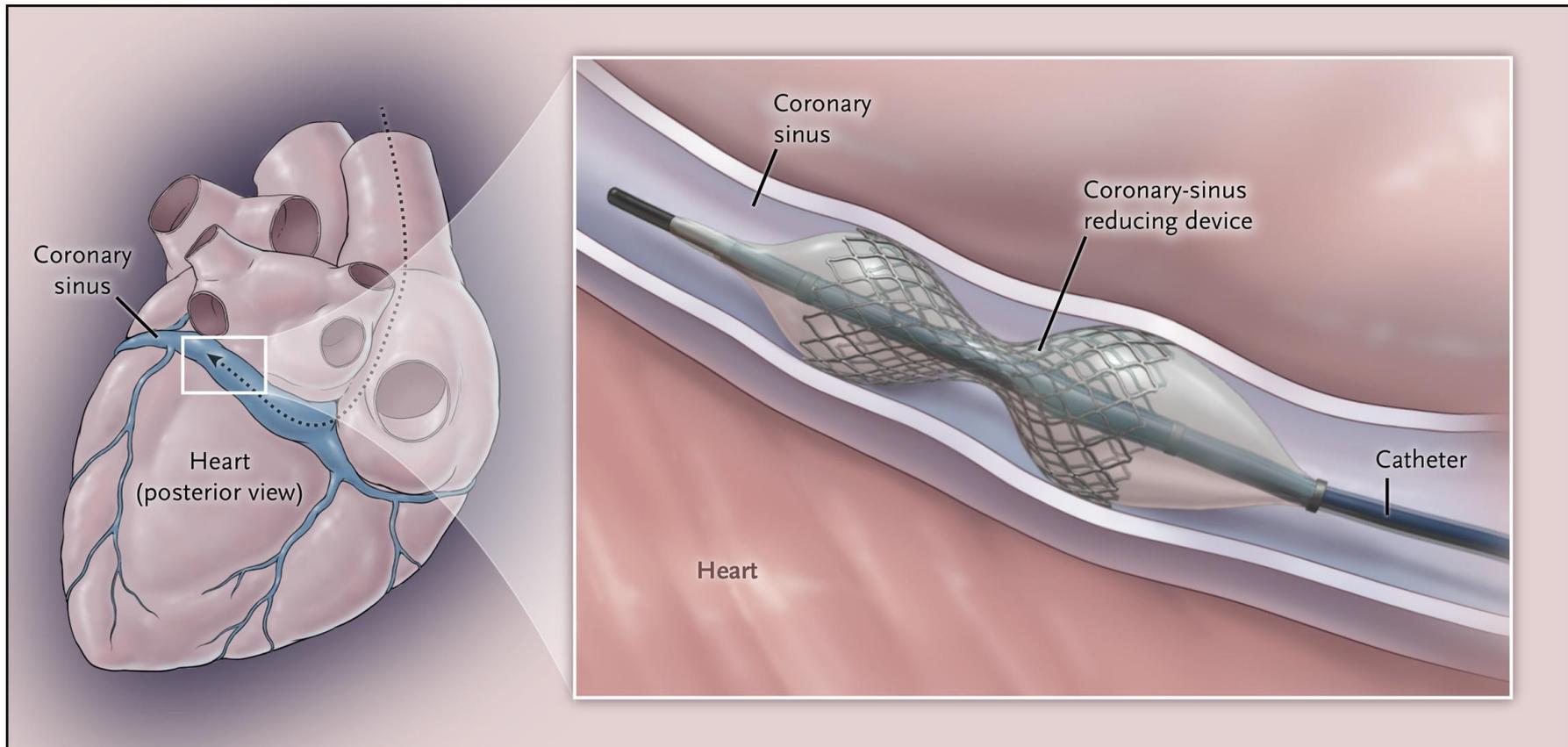
Henry TD, et al: *Eur Heart J* 2014 Feb;9(10):1158

Revascularization

- Patients with chronic angina are either:
 - unsuitable for revascularization or
 - continue to suffer from angina following revascularization procedures
- Revascularization eliminates angina symptoms in:
 - about 2/3rd of patients with stable CAD, independent of revascularization procedure (PCI or CABG)
- About 30% of patients re-vascularized for stable CAD continue to experience anginal symptoms

The Coronary Sinus Reducer - Device-Based Therapy for Refractory Angina

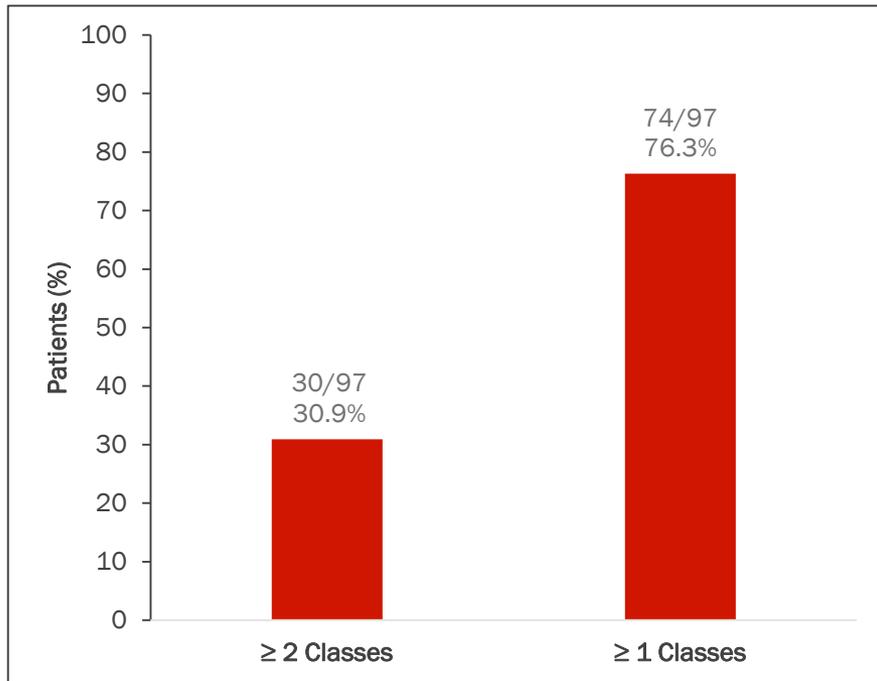
- Adjunctive therapy to CABG and PCI
- Implanted in the coronary sinus (large vein in heart)
- Modulates flow of blood in the heart to elevate CS pressure
- Re-distributes blood to ischemic areas in the endocardium



CCS Grade Improvement at 6 Months

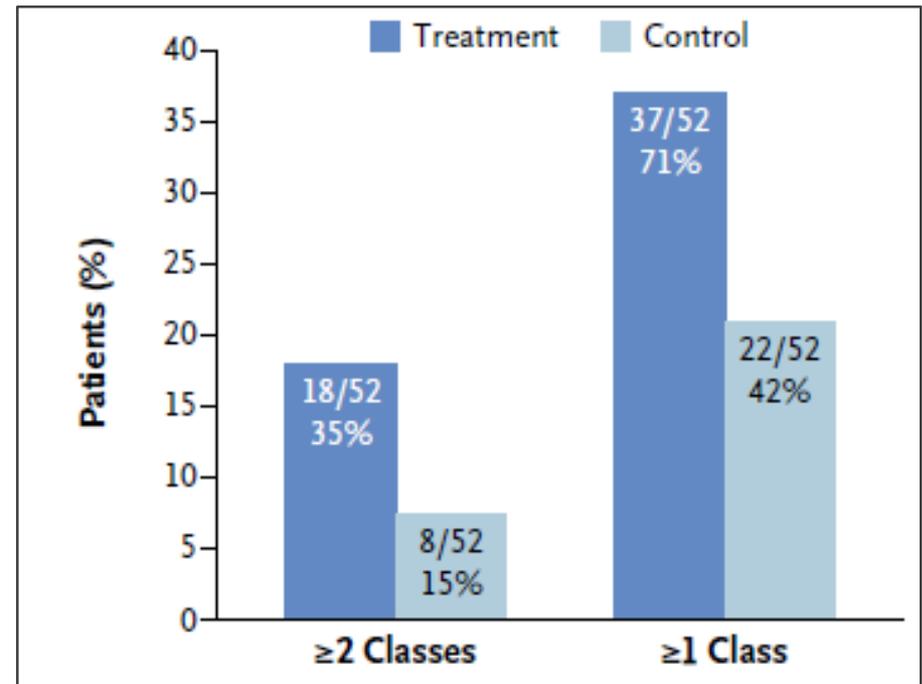
REDUCER-I Post Market Study, compared to COSIRA

REDUCER-I
N=97



Includes data through analysis lock on 19 Apr 2018; data on file at Neovasc

COSIRA
N=104



Verheye S, Jolicœur EM, Behan MW, et al. Efficacy of a device to narrow the coronary sinus in refractory angina. *N Engl J Med* 2015; 372: 519-527

Just published in the International Journal of Cardiology: REDUCE, a multicenter, 141 patient clinical registry: 45% of patients with 2 or more & 81% of patients with at least 1 Angina CCS class improvement

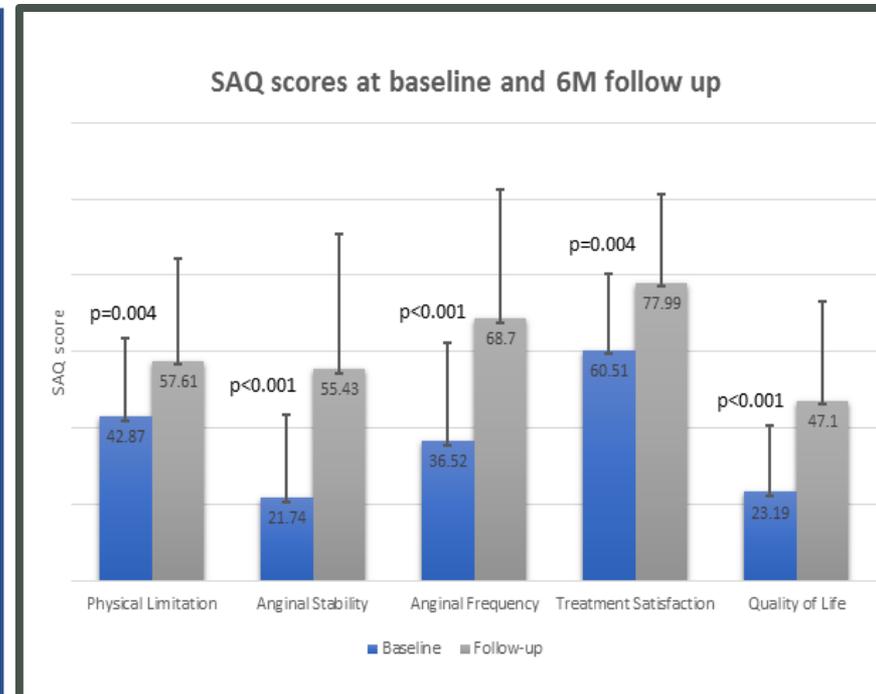
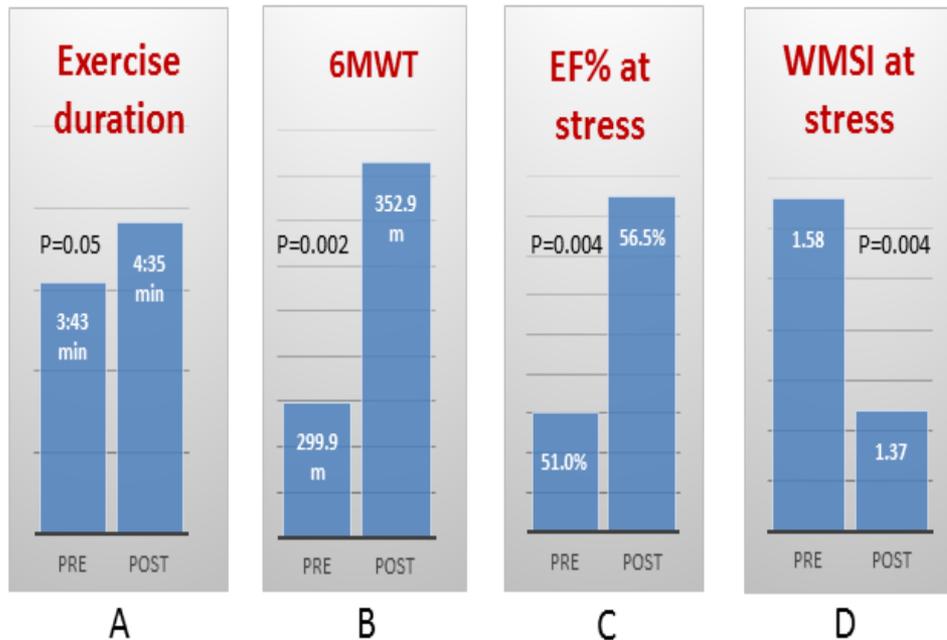
Data from Post Market Studies and Registries demonstrate similar results to the COSIRA (Randomized, Double-Blind, Sham Controlled) Clinical Trial

In patients suffering from Angina pectoris, the Reducer has been shown to:

1. Diminish angina symptoms
2. Improve quality of life
3. Improve exercise capacity
4. Improve myocardial ischemia and cardiac performance

Improvement in Exercise Capacity N=48

Improvement in Quality of Life N=48



EMEA Reducer commercial growth

- Actual Q2, '18 Reducer revenue was up 64% over actual Q2, '17
- Actual Q2, '18 Reducer revenue was at 108% of plan

- Actual first ½ year 2018 Reducer revenue was up 47% over first ½ year of 2017
- Actual first ½ year 2018 Reducer revenue was at 115% of plan

- Actual Q2 Reducer GM was at 78%

Thank you!