Pulse Biosciences®

Corporate Overview

January 2025

Forward Looking Statements

All statements in this presentation that are not historical are forward-looking statements, including, among other things, statements relating to the effectiveness of the Company's CellFX nsPFA technology and CellFX System to non-thermally clear cells while sparing adjacent non-cellular tissue, statements concerning the Company's expected product development efforts and future clinical studies and regulatory submissions, whether with the U.S. FDA or otherwise, statements concerning whether any clinical study will show that the Company's novel nsPFA mechanism of action will deliver fast and precise ablations in cardiac tissue, statements concerning market opportunities, customer adoption and future use of the CellFX System to address a range of conditions such as atrial fibrillation, statements concerning early clinical successes and whether they are predictive of the safety and efficacy of any medical device such as the CellFX nsPFA Cardiac Surgery System, Pulse Biosciences' expectations, whether stated or implied, regarding whether the Company's CellFX nsPFA technology will become a disruptive, superior and durable treatment option for treating atrial fibrillation or any other medical condition, and other future events. These statements are not historical facts but rather are based on Pulse Biosciences' current expectations, estimates, and projections regarding Pulse Biosciences' business, operations and other similar or related factors. Words such as "may," "will," "could," "would," "should," "anticipate," "predict," "potential," "continue," "expects," "intends," "plans," "projects," "believes," "estimates," and other similar or related expressions are used to identify these forward-looking statements, although not all forward-looking statements contain these words. You should not place undue reliance on forward-looking statements because they involve known and unknown risks, uncertainties, and assumptions that are difficult or impossible to predict and, in some cases, beyond Pulse Biosciences' control. Actual results may differ materially from those in the forward-looking statements as a result of a number of factors, including those described in Pulse Biosciences' filings with the Securities and Exchange Commission. Pulse Biosciences undertakes no obligation to revise or update information in this release to reflect events or circumstances in the future, even if new information becomes available.

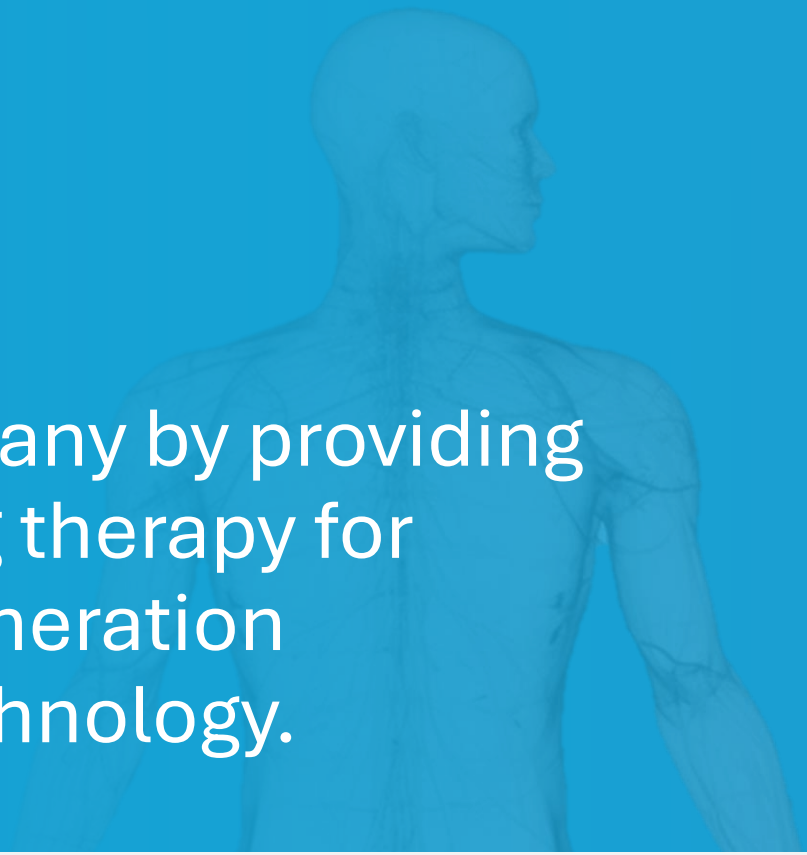
This presentation and any documents incorporated by reference may contain market data that we obtain from industry sources. These sources do not guarantee the accuracy or completeness of the information. Although we believe that our industry sources are reliable, we do not independently verify the information. The market data may also include projections that are based on other projections. While we believe these assumptions and projections are reasonable and sound, as of the date hereof, actual results may differ from these projections.

Pulse Biosciences®

Pulse Biosciences®

Our Mission

To build a thriving, viable company by providing revolutionary and life-changing therapy for multiple diseases with next-generation **Nanosecond Pulsed Field** technology.



“

It was immediately clear to me that nanosecond pulsed field ablation (**nsPFA) has the potential to not only replace all other energy modalities in cardiac ablation,** including radiofrequency and cryo, but due to the speed, safety, and ablation performance of the system, **it also has the potential to significantly expand the number of patients we treat**.”

– Dr. Niv Ad,
One of the most published cardiac surgeons in the world

Financial Snapshot

Strong balance sheet as of 12/31/2024

- Cash and cash equivalents balance $118mm [unaudited] as of December 31st
- Pro forma cash and cash equivalents of $130mm including receipts from rights offering
- No debt

~2-Year cash runway

- Cash burn of approximately $36mm in 2024
- Cash burn increasing in 2025 to support commercialization and multiple IDEs

+80% Insider Ownership

Experienced Technologists, Operators and Clinicians **Form Proven Leadership Team**

Paul LaVioletta
Chief Executive Officer
Co-Chairman of the Board

SV HEALTH INVESTORS · Boston Scientific · BARD

Kevin Danahy
Chief Commercial Officer

Medtronic · Johnson & Johnson · ZIMMER BIOMET · INTUITIVE

Darrin Uecker
Chief Technology Officer
Director

gynesonics · computermotion

Mitch Levinson
Chief Strategy Officer

thermage · coolsculpting by ZELTIQ · NELLCOR

Renowned Scientific Expertise

Dr. Niv Ad
Chief Science Officer,
Cardiac Surgery
Adventist HealthCare White Oak Medical Center

Dr. Gan Dunnington
Chief Medical Officer,
Cardiac Surgery
Adventist Health

Dr. David Kenigsberg
Chief Medical Officer,
Electrophysiology
HCA Florida Healthcare

Established Board of Directors

Robert (Bob) W. Duggan
Co-Chairman of the
Board of Directors

Richard van den Broek
Director

Manmeet S. Soni
Director

Mahkam "Maky" Zanganeh, DDS
Director

Proprietary Design and Engineering

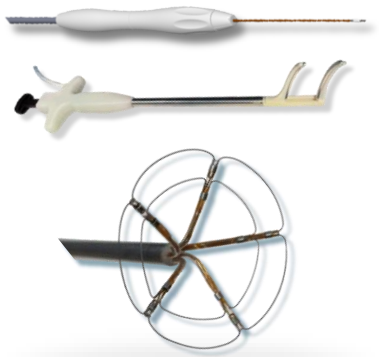
Powering the next generation in bioelectric medicine with **Nanosecond Pulsed Field Ablation (nsPFA™) Technology**

Proprietary Technology

Only company bringing novel Nanosecond Pulsed Field Ablation (nsPFA) technology to patient care

Proprietary Treatments

nsPFA enabled applicators deliver highly differentiated value in their markets



Robust Patent Portfolio

Surrounding the technology, devices, and use of nsPFA

183
Issued Patents globally owned & licensed

+103
Patent Pending Applications

Robust Market Entry

Initiating 3 IDEs in 2025 and creating a commercial market in Thyroid

Pulse Biosciences' nsPFA Platform

Unlocks >$6B in first 3 target markets

to

>$16B

in global including U.S. markets

Thyroid Application

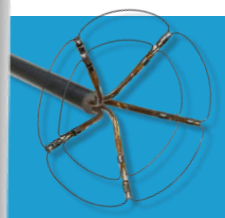
$1.3B U.S. Addressable Annual Market[1,2,3,4,5,*]

$2.8B Global Potential Market[1,2,3,4,5,*]

Cardiac Surgery Application

$1.8B U.S. Addressable Annual Market[6,7]

$6.0B Global Potential Market[6,7]



Endocardial Application (EP)

$3.0B U.S. Addressable Annual Market[8]

$8.0B Global Potential Market[9]

Pulse will create, expand, and upend these markets with penetration and global expansion

CellFX nsPFA Platform

*based on reimbursement updates and asp assumptions

RF / Heat

CRYO / Cold

Existing ablative therapies **have limitations**

PFA is currently drastically affecting the EP market

A new treatment paradigm that allows for:

A fast, efficient treatment

- ↑ Increased throughput
- ↑ Increased predictability for scheduling and treatment

Safer treatment profile over RF and CRYO

- ↓ Less worry about the esophagus

With such marked improvements, **What gaps remain?**

Micro-PFA Compared to nsPFA for Electrophysiology

Current workflow and case time

Nanosecond technology can revolutionize EP and multiple markets

2	# Configurations	1
8	Energy deliveries per target	1
REQUIRED	Device rotations to “connect the dots”	NONE REQUIRED
30 minutes	Average ablation time	**10** minutes
4–6mm	Lesion quality/depth	6–9mm[10]
REQUIRED	Patient paralytics	NONE REQUIRED
Microsecond	Pulse duration	**Nanosecond**

1. Koruth et al. Circ Arrhythm Electrophysiol. 2024;17:e012854. DOI: 10.1161/CIRCEP.124.012854

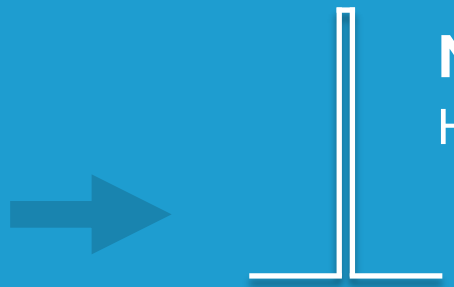
Pulse Biosciences®

Energy + Design Matters

The nsPFA Difference for EP

Microsecond PFA
Low Amplitude, Long Duration

Millionth (.000001 sec)



Nanosecond PFA
High Amplitude, Short Duration

Billionth (.000000001 sec)

Microsecond PFA Catheters

Low amplitude → Shallow ablations
Long duration → High energy
- Significant nerve stimulation
- Cardiac synch and paralytics required

Design Implications
- Design constrained to small focal ablations
- Rotations and multiple shots to connect the dots

nsPFA 360 Catheter

High amplitude → Deep ablations
Short duration → Low energy
- Much reduced nerve stimulation
- No cardiac synch or paralytics

Design Implications
- Thin, flexible electrode for versatility
- Full ring—no connecting dots

Nanosecond PFA Advantage

- **Product designs** are purpose built for the application
- **Much lower energy** reduces electrode design constraints of standard PFA
- **Reduces stimulation** to nerves and muscle
- **Nonthermal**: no thermal damage or spread beyond the electrical field
- **Faster, deep ablations** with single energy delivery
- **Selectively treats only organelle**-bearing structures – spares nerves, vessels, structural tissue

nsPFA technology's novel mechanism
activates the body's natural healing process

History of Leading Nanosecond PFA Development

Pulse Biosciences is the leader in designing and engineering nsPFA technology

Inventing and harnessing nsPFA technology dates back two decades

- Differentiated approach focused on novel therapy development
- 10+ years in development at Pulse Biosciences
- $300mm Development Investment to date
- >1,100 industry-wide publications to date
- Multiple FDA Clearances
- Breakthrough Designation

Creating wide and deep IP portfolio covering nsPFA energy and system

Continued development and patent filings covering systems, applications, and methods

Patent Portfolio 2025

183	103
Issued patents globally owned & licensed	Pending patent applications

Business Model

>$6B
to start

Direct and Partnership approaches will be determined for each market based on the opportunity to enter or upend markets with capital efficiency

Direct
Candidate Markets

Partnership
Candidate Markets

FACTORS INFLUENCING THE STRATEGY INCLUDE:

- New or established market
- Presence of direct competition
- Efficiency of launch investment

- Scale and simplicity of platforms
- Therapy synergies
- Enabling differentiation for a strategic partner

Collapse time to access patients

Market Entry Strategy

Thyroid Market

$1.3B Addressable Market*

Create an untapped market in Thyroid

Thyroid: First use case for percutaneous soft tissue ablation electrode

Cardiac Surgery

$1.8B Addressable Market*

Expand usage in the Cardiac Surgery market

AF Ablation

$3.0B Addressable Market*

Upend the EP market

*U.S. Addressable Annual Market

FDA 510(k) March 2024

Create an Untapped Market in Thyroid

Opening a new era in therapy for soft tissue ablation such as benign thyroid nodules

Pulse Biosciences®

Benign Thyroid Market Opportunity

Drivers for Pulse in the Benign Thyroid Market

- Thyroid-sparing procedure
- Nonsurgical intervention
- Potential to eliminate up to ~150k thyroidectomies yearly

nsPFA technology is a new paradigm for surgical patients and watchful waiters

BTN patients diagnosed in U.S. ~250k[3,4,5]

~150k
Benign thyroidectomies

~100k
Enter "Watchful Waiting"

$1B+
Annual U.S. TAM

Newly created, untapped market

Create an Untapped Market in Thyroid

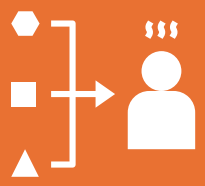
nsPFA provides significant therapeutic benefits for physicians and patients

- Spares nerves, vessels, critical structures
- Nonthermal - does not cause fibrosis or RF scar ball formation
- Significant volume reduction and symptomatic relief at 1 month
- Excellent safety profile
- Treated area feels soft, natural
- High patient satisfaction
  - Improved cosmesis

Prof. Stefano Spiezia – ATA 2024 Presentation

Thyroid Market Development Status

- **Soft Tissue Ablation – FDA Cleared**
- **510(k) Pilot launch underway**
- **Launch led by 10 KOL sites to drive adoption**
- **Initiating investigator-sponsored research to add clinical data and experience**



Initiating a pivotal clinical trial
for benign thyroid nodule ablation indication
in mid-2025

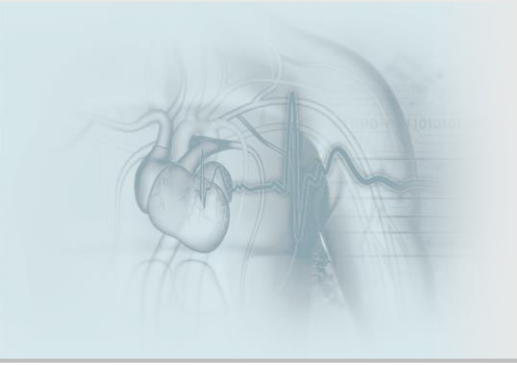
Expanding Usage in the Surgical Cardiac Ablation Market

nsPFA for Surgical AF

Surgical Cardiac Ablation Market Opportunity

Drivers for Pulse in the Surgical Cardiac Ablation Market

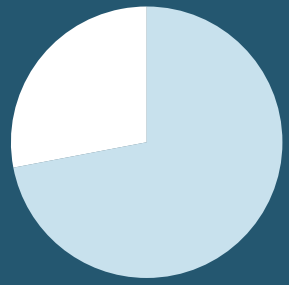
- 84,000 U.S. patients per year with pre-operative AF
  - Only ~30% being treated with RF technology
- Pulse will be first to market with a PFA solution
- RF technology: safety and efficacy concerns



nsPFA technology expands the market

Annual open-heart procedures in U.S. 300K[11]

28%
Patients have pre-operative AF[12]



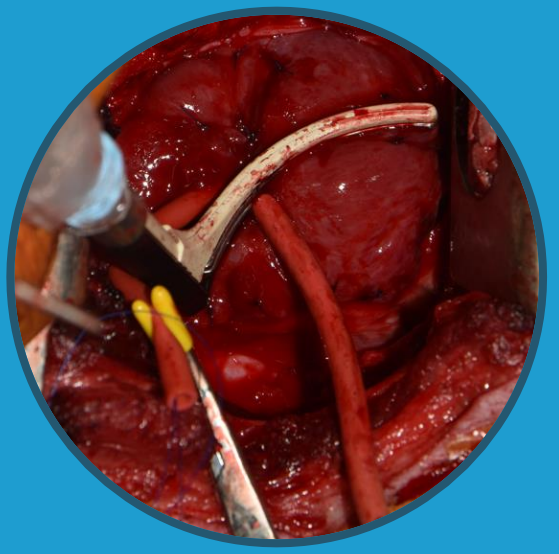
72%
Patients at high risk of developing post-op AF[13]

216k
Future Potential Prophylactic AF Annual U.S. Patients

Expanding Usage in the Surgical Cardiac Ablation Market

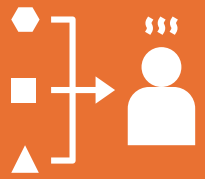
Speed and Versatility for Cardiac Surgical Applications

- Speed, ease of use and safety of nsPFA address key physician concerns limiting adoption of thermal modalities
  - Capable of transmural ablations in seconds
  - Fully automated ablation independent of tissue thickness or type
  - Nonthermal, eliminating risk of damage to surrounding critical structures, e.g. esophagus
  - Ability to perform ablation off cardiopulmonary bypass

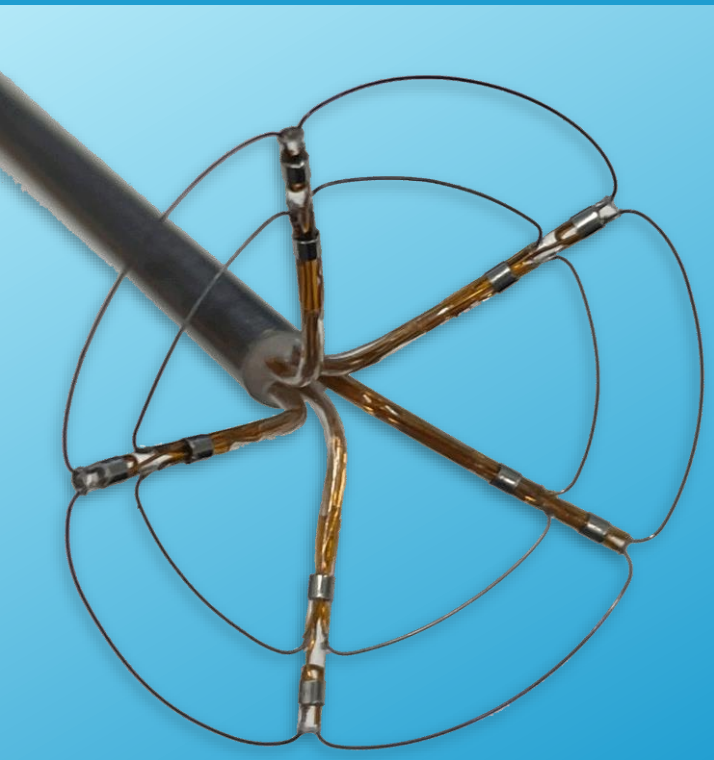


Surgical Cardiac Ablation Status

- Received FDA Breakthrough Device Designation in July 2024
- Enrolled in the FDA's Total Product Life Cycle (TPLC) Advisory Program (TAP)
- 30 patient multi-center feasibility study underway, expect enrollment completion in Q1 '25
- Recent publication in The Journal of Thoracic and Cardiovascular Surgery



Initiating a pivotal clinical trial for AF **mid 2025**



Upending AF Ablation in the EP Market

nsPFA for AF

EP Market Opportunity
AF Ablation

Drivers for Pulse in the EP AF Ablation Market

- Drop-in workflow replacement
- Speed = Improved efficiency over 1st gen PFA devices
  - Less configurations, rotations, applications
- Enhanced lesion quality through nsPFA

Market growing at

10–15% CAGR[14]

Global Atrial Fibrillation (AF) Disease State:

>$8B[9]

Electrophysiology Market

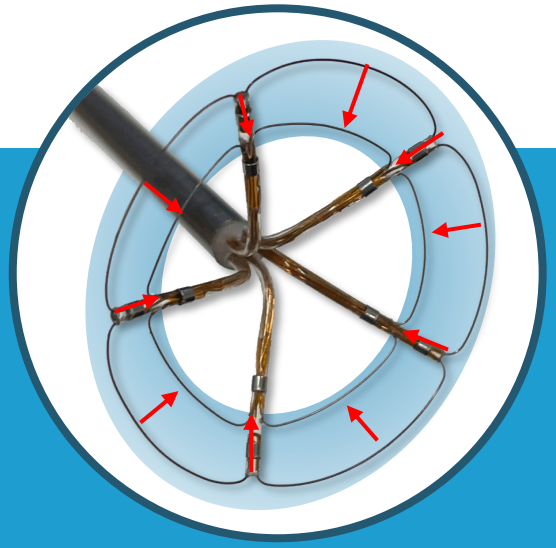
~1.9M[15]

U.S. patients diagnosed with AF annually

nsPFA technology upends the EP market with a novel and differentiated energy

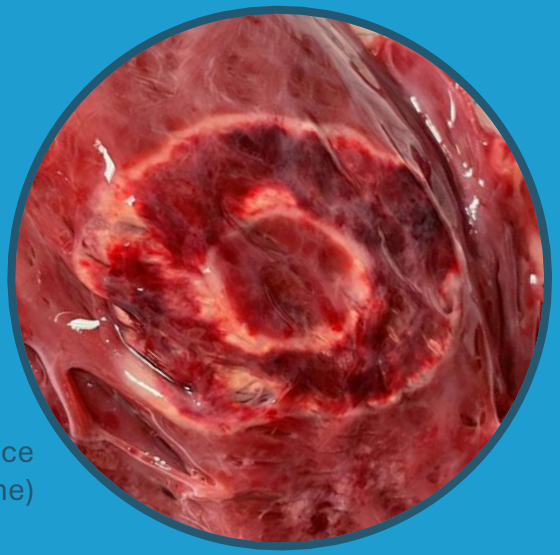
360 Catheter for Pulmonary Vein Isolation

Customized nsPFA Electrode Design



Achieves circumferential lesions with continuous ring electrodes for TRUE “single-shot” Pulmonary Vein Isolation (PVI) ablation

- “Drop in” workflow for speed and ease of use
- Eliminates need to rotate device to “connect the dots”
- Deeper lesions than micro PFA = improved transmurality
- Less dependent on tissue contact
- More rapid isolation of vein
- Nonthermal
- Design allows for versatility in left atrial utilization



2-Day Endocardial Surface
~5cm Diameter (Porcine)

360 Cardiac Catheter Status

Program Updates:

- Data read-out of initial 30 treated patients
- Enrollment ongoing in multiple centers
- 3rd site starting in January
  – Dr. Natale, Rome, IT

AF Symposium Boston, MA, January 16–18, 2025

Friday, January 17th

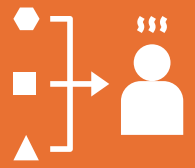
Pulsed Field Ablation Using a Compliant Circular Catheter Delivering Nanosecond Pulses to Treat Atrial Fibrillation

5:30–7:00pm ET, Vivek Reddy, MD
– Late Breaking Clinical Science Session

Saturday, January 18th

Nanosecond Pulsed Field Ablation for Atrial Fibrillation

7:30–9:30am ET, Petr Neuzil, MD, PhD
– Live Case Transmission from Homolka Hospital, Prague, Czech Republic



Initiating a pivotal clinical trial
for Paroxysmal AF **mid 2025**

Summary

Novel Energy
- Unique MOA
- Patent Protected
- Nonthermal

IP – 183 + 103
- Pulse will own the Nanosecond PFA Space

Clinical evidence
- Mounting and superior
- Paradigm shifting care

3 IDEs in 2025
- Funded
- Advancing
- Measurable Milestones

Target Market Values
- $6B U.S. Annual Addressable Mkt
- Create, Expand, Upend

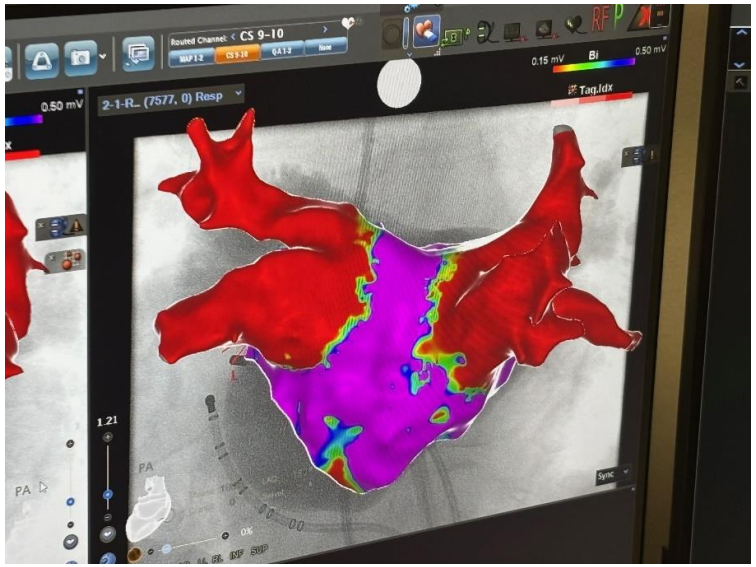
Portfolio of markets and pipeline of future indications
- Multiple clinical or commercial programs activated

Initializing commercialization
- Launch underway

Strong balance sheet
- Multi-year cash runway

360 Cardiac Catheter Feasibility Study Progress

Dr. Johan Vijgen
Jessa Hasselt Hospital



Post map after Jessa Hasselt's first case

nsPFA 360 Cardiac Catheter Value Proposition in Action

- 1st clinical case with the 360
- Ablation Time PVI : 10 min
- First-pass isolation of all pulmonary veins
- Low to no learning curve

Pulse Biosciences®

Citations

1) Data on file. Thyroidectomy WW Procedure Data provided by iData
2) https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8215427/
3) Fine-Needle Aspiration of the Thyroid Gland https://www.ncbi.nlm.nih.gov/books/NBK285544/
4) CMS - https://www.cms.gov/medicare-coverage-database/view/lcd.aspx?lcdid=38968&ver=4
5) CDC - https://seer.cancer.gov/statfacts/html/thyro.html
6) Global Cardiac Surgical Volume and Gaps: Trends, Targets, and Way Forward. Annals of Thoracic Surgery. 2023, ISSN 2772-9931, https://doi.org/10.1016/j.atssr.2023.11.019.
7) Market size for 2023. 1% CAGR for Surgical Volume
8) Clarivate – US EP Market Report
9) Company filings, BofA Global Research. Revenue is BofA estimate
10) Neis et al. Circ Arrhythm Electrophysiol. 2024;17:e012854. DOI: 10.1161/CIRCEP.124.012854
11) Wyler von Ballmoos, Moritz C. et al.The Annals of Thoracic Surgery, Volume 117, Issue 2, 260 – 270
12) McCarthy, P. M. et al. Prevalence of atrial fibrillation before cardiac surgery and factors associated with concomitant ablation. J. Thorac. Cardiovasc. Surg. 159, 2245-2253.e15.
13) Burrage, P.S., Low, Y.H., Campbell, N.G. et al. New-Onset Atrial Fibrillation in Adult Patients After Cardiac Surgery. Curr Anesthesiol Rep 9, 174–193 (2019). https://doi.org/10.1007/s40140-019-00321-4
14) Wong CX, Brown A, Tse HF, et al. Epidemiology of Atrial Fibrillation: The Australian and Asia-Pacific Perspective. Heart Lung Circ. 2017;26(9):807-879
15) Joglar et al J.A.C.C. V O L . 8 3 , N O . 1 , 2 0 2 42023 Guideline for the Diagnosis and Management of Atrial Fibrillation J A N U A R Y 2 / 9 , 2 0 2 4 : 1 0 9 – 2 7 9116 (Linear Interpolation)