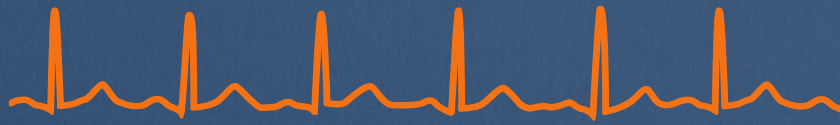
AtriCure Investor Presentation

Creating a World Class Afib Platform



January 2021

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Forward Looking Statements

This presentation contains “forward-looking statements,” which are statements related to future events that by their nature address matters that are uncertain. All forward-looking information is inherently uncertain and actual results may differ materially from assumptions, estimates or expectations reflected or contained in the forward-looking statements as a result of various factors. For details on the uncertainties that may cause AtriCure’s actual results to be materially different than those expressed in its forward-looking statements, see its Annual Report on Form 10-K and Quarterly Report on Form 10-Q filed with the SEC and available at http://www.sec.gov, which contain risk factors. Forward-looking statements address AtriCure’s expected future business, financial performance, financial condition as well as results of operations, and often contain words such as “intends,” “estimates,” “anticipates,” “hopes,” “projects,” “plans,” “expects,” “seek,” “believes,” "see," “should,” “will,” “would,” “target,” and similar expressions and the negative versions thereof. Such statements are based only upon current expectations of AtriCure. Any forward-looking statement speaks only as of the date made. Reliance should not be placed on forward-looking statements because they involve known and unknown risks, uncertainties and other factors which may cause actual results, performance or achievements to differ materially from those expressed or implied. Forward-looking statements include statements that address activities, events or developments that AtriCure expects, believes or anticipates will or may occur in the future. Forward-looking statements are based on AtriCure’s experience and perception of current conditions, trends, expected future developments and other factors it believes are appropriate under the circumstances and are subject to numerous risks and uncertainties, many of which are beyond AtriCure’s control. These risks and uncertainties include, but are not limited to: whether CONVERGE will be approved by FDA and any other required regulatory authorities; whether any additional clinical trials will be initiated or required for CONVERGE prior to approval of FDA, or at all; whether AtriCure will be able to successfully implement its commercialization plans for CONVERGE, if approved; whether the market opportunity for CONVERGE is consistent with the Company’s expectations and market research; AtriCure’s ability to execute on the commercial launch of CONVERGE, if and when approved, on the timeline expected, or at all; whether AtriCure will be able to generate its projected net product revenue on the timeline expected, or at all; the effects of the COVID-19 outbreak on AtriCure’s business and results of operations, including the effects of suspension or halting of elective surgeries; other matters that could affect the availability or commercial potential of CONVERGE and AtriCure’s other products and product candidates; competition from new and existing products and procedures in the highly competitive medical device industry; and other important factors, including, AtriCure’s expectations regarding its financial performance and capital requirements, any of which could cause AtriCure's actual results to differ from those contained in the forward-looking statements or otherwise discussed in AtriCure’s reports filed with the SEC. With respect to the forward-looking statements, AtriCure claims the protection of the safe harbor for forward-looking statements contained in the Private Securities Litigation Reform Act of 1995. AtriCure undertakes no obligation to publicly update or revise any forward-looking statements to reflect new information or future events or otherwise unless required by law.

We are passionately focused on reducing the global Afib epidemic and healing the lives of those affected

Large Markets

Addressing an underserved and growing patient population

Strong Portfolio

Existing products and solutions driving consistent growth

Bright Future

Novel therapies supported by growing body of clinical evidence

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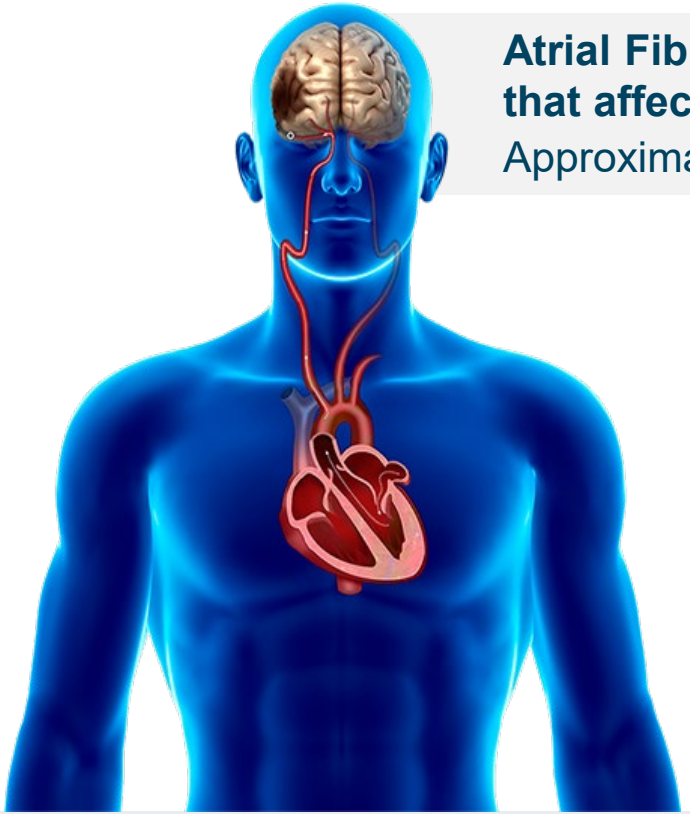
Afib: a Serious Problem



Atrial Fibrillation (Afib) is an irregular heartbeat (or arrhythmia) that affects more than 33 million people worldwide.[1]

Approximately 1.2 million Afib diagnoses annually in the US.[2]

5x Risk of ***Stroke***[3]

>5x Higher risk of ***Heart Failure***[4]

46% Greater risk of all cause ***Mortality***[5]

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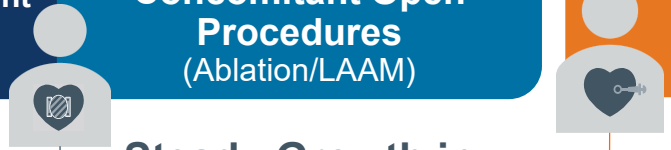
US Market Opportunity

$350M
Pain Management Procedures
(Ablation)

$700-800M
Concomitant Open Procedures
(Ablation/LAAM)

$2B+ and growing
Standalone Hybrid Procedures
(Ablation/LAAM)



Boosting Growth via adjacent new market

Estimated **140,000 thoracic patients** annually

Steady Growth in penetration of Cardiac Surgery Market

- Estimated **300,000 total patients** (Afib, non-Afib) annually with structural heart issue
- Only PMA product for the concomitant surgical treatment of Afib

Expansive Growth from development of Standalone Afib Market

Vastly underpenetrated market with 10-15% estimated annual market expansion

- **Addressable market is more than 3 million patients;** less than 1% treated today
  - 25,000 long-standing persistent patients treated by catheter ablation only today
- Multiple approaches to treatment
  - CONVERGENT + AtriClip®, DEEP, LARIAT®

Market opportunity based on internal estimates and research, as well as from publicly available information.
See Supplemental Information for additional detail

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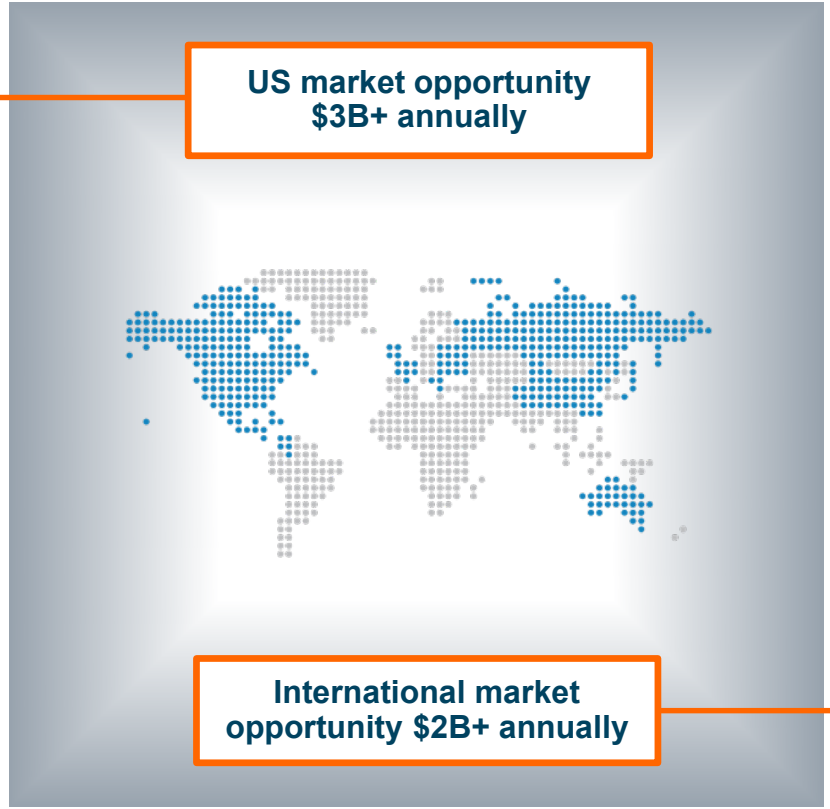
Significant Global Market Opportunity

US Market Focus

- Continued build of dedicated sales and training expertise
- Clinical data supporting multiple label expansions
- New product development
- Enhance reimbursement



International Market Focus

- Penetration of large markets first
- Expand product availability
- Improve market access via reimbursement
- Continued build of dedicated sales and training expertise

Market opportunity based on internal estimates and research, as well as from publicly available information.
See Supplemental Information for additional detail

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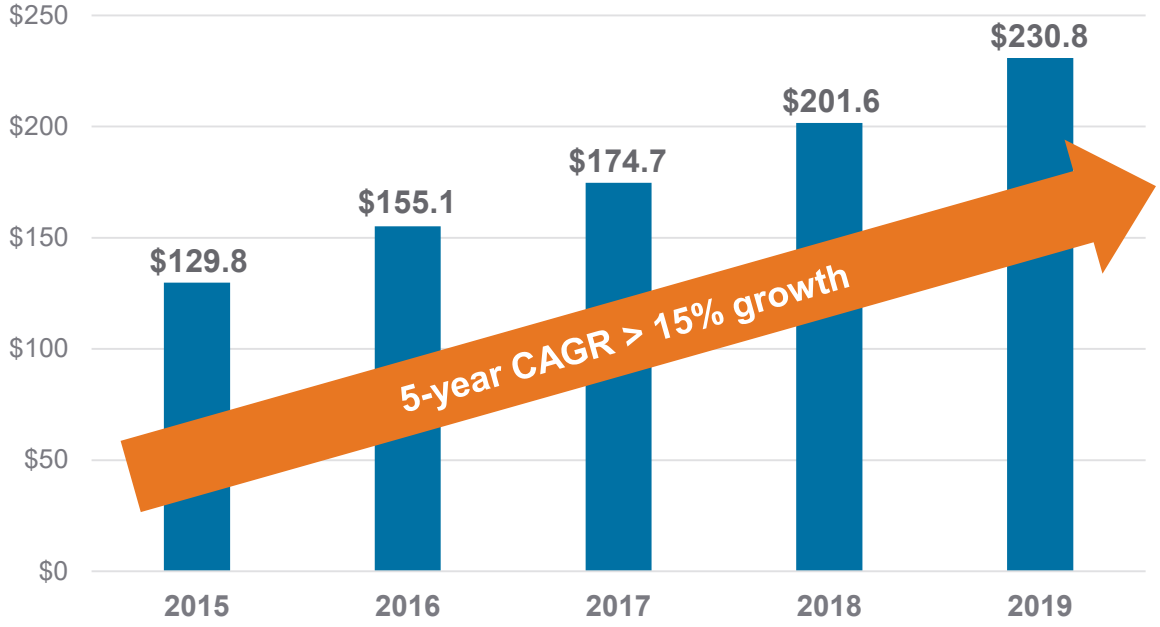
History of Strong Financial Performance

Worldwide Revenue ($ Millions)



	2015	2016	2017	2018	2019
Revenue Growth	20.8%	19.5%	12.6%	15.4%	14.5%
Gross Margin	71.6%	71.6%	72.2%	73.0%	73.8%

Historical Results

Consistent Revenue Growth
Strong history of double-digit YoY growth

Steady Improvement to Gross Margin

$250 million Cash & Investments
as of September 30, 2020

Q4 2020 Results*

Revenue of $57.7 million
+5% sequential quarter growth over Q3 2020

** Q4 2020 revenue is preliminary and unaudited*

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COVID-19 Response

Operationally, financially, and strategically positioning AtriCure for long-term growth

Health & Safety

Provide a safe work environment for our employees

- Enabling employees to work from home as appropriate
- Providing personal protection and other measures to ensure the safety of those working in our offices
- Limiting non-essential travel

Maintaining Operations

Deliver products and support to our customers

- Maintaining manufacturing, assembly, fulfillment – modified to adhere to safety recommendations
- Continuing case coverage support
- Utilizing online and mobile training venues to educate our customers

Expense Management

Cost-reductions without sacrificing strategic initiatives

- Delayed certain capital investments
- Temporarily reduced executive and board compensation
- Limited other non-essential operating expenses where possible

While our plans will continue to evolve in response to changes caused by the COVID-19 pandemic, we remain committed to the AtriCure Team and to the execution of our strategic initiatives.

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2021 Priorities: Building for the Future

Standalone Hybrid Procedures

Ablation and LAAM

- **CONVERGE PMA approval and launch**
  - Re-engaging sites and training new accounts
  - Addition of AtriClip to the Convergent procedure
  - Continued global expansion of commercial and training teams
- **aMAZE™ clinical trial**
  - PMA submission to FDA
  - Release of clinical trial data

Concomitant Open Ablation

- **EnCompass® Clamp clearance and launch**

Pain Management

- **Expansion of commercial team, training programs**

COVID Recovery

- **Supporting our people, patients and partners**

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CONVERGE Overview

SUPERIORITY TRIAL designed to support FDA approval of the EPi-Sense device

STUDY DESIGN

Summary
Multi-center, prospective, open label randomized 2:1 (Hybrid Convergent procedure vs endocardial catheter ablation) pivotal study

Number of Subjects and Sites
153 subjects
27 sites (25 US and 2 OUS)

Study Duration
12 month and 18 month monitoring, then 3 and 5 year follow-up of all subjects

PRIMARY ENDPOINTS

Effectiveness
Primary efficacy endpoint is success or failure to be AF/AT/AFL free absent class I and III AADs except for a previously failed or intolerant class I or III AAD with no increase in dosage following the 3 month blanking period through the 12 months post procedure follow-up visit

Safety
Predetermined performance goal for the study is 12% freedom from MAE's as adjudicated by the CEC for the procedural to 30-day post procedure time period

CONVERGE Clinical Trial

HIGHLIGHTS

- Completed enrollment August 2018
- Data released at virtual Heart Rhythm Society (HRS) conference May 2020
- PMA submission seeking approval for treatment of long-standing persistent Afib Q4 2020
- Trial results published in *Circulation: Arrhythmia and Electrophysiology* November 2020
- Convergent procedure featured in HRS conference in November 2020: *Hybrid Therapies for AF: Present and Future*

Achieved statistical superiority for primary endpoints

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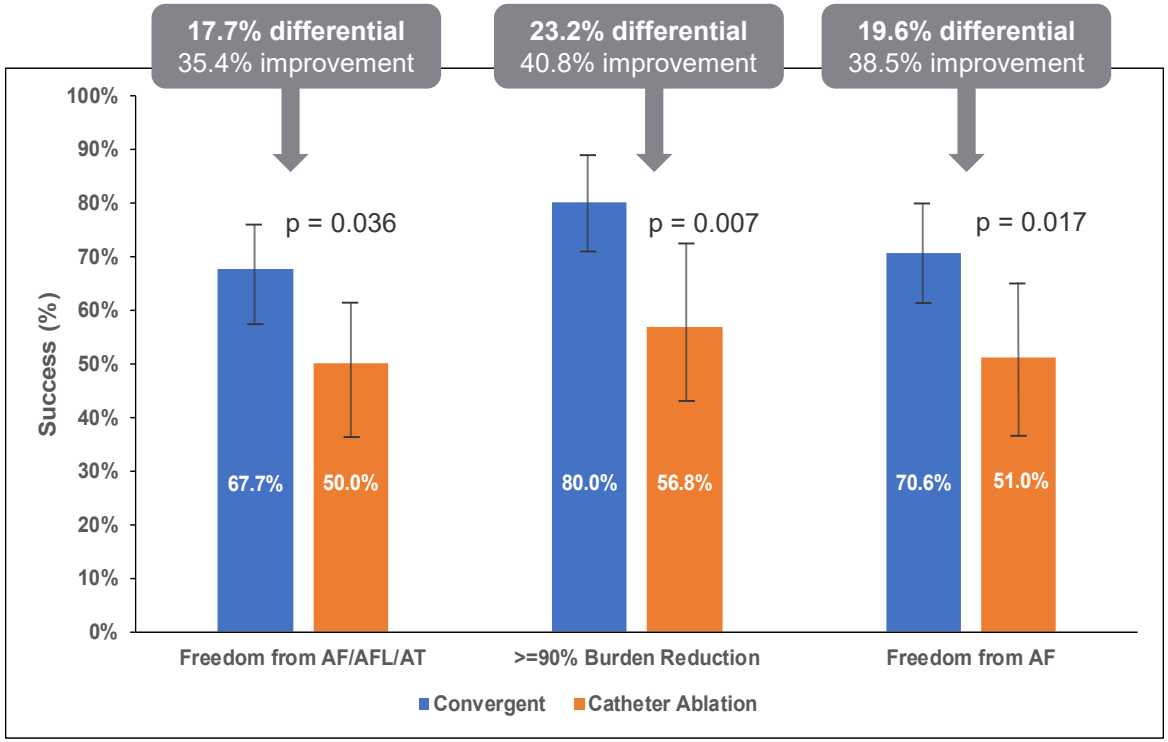
CONVERGE Trial Primary and Secondary Effectiveness



Chi-squared p values

Superiority of the Hybrid Convergent procedure over Catheter ablation in all three primary and secondary endpoints was demonstrated; more than 35% improvement in each endpoint was shown.

Data for long-standing persistent patients in the trial demonstrated particularly compelling efficacy and durability – exceeding the overall trial results at left.

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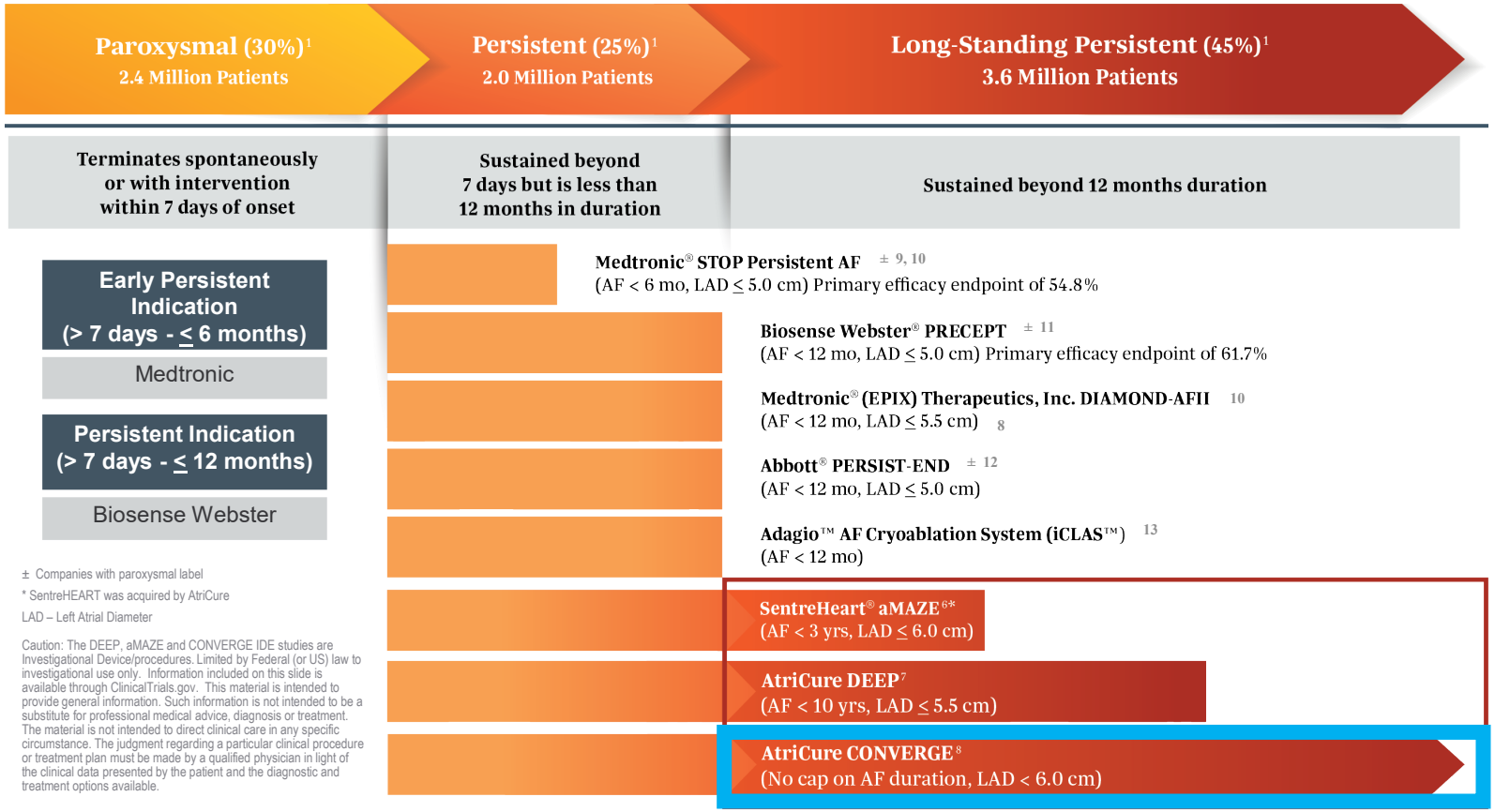
Persistent / Long-Standing Persistent AF Clinical Trial Patient Landscape



± Companies with paroxysmal label

* SentreHEART was acquired by AtriCure

LAD – Left Atrial Diameter

Caution: The DEEP, aMAZE and CONVERGE IDE studies are Investigational Device/procedures. Limited by Federal (or US) law to investigational use only. Information included on this slide is available through ClinicalTrials.gov. This material is intended to provide general information. Such information is not intended to be a substitute for professional medical advice, diagnosis or treatment. The material is not intended to direct clinical care in any specific circumstance. The judgment regarding a particular clinical procedure or treatment plan must be made by a qualified physician in light of the clinical data presented by the patient and the diagnostic and treatment options available.

CONVERGE

Emphasizes value of team-based approach for advanced AF treatment

Additive to endocardial catheter ablation

[1] Percentages reflect the percentage of diagnosed AF patients in each disease stage in the AF Progression

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aMAZE Overview

SUPERIORITY TRIAL designed to evaluate safety and effectiveness of the LARIAT System to percutaneously isolate and ligate the Left Atrial Appendage for the treatment of persistent or longstanding persistent Afib

STUDY DESIGN

- **Summary**
  Multi-center, prospective, open label randomized 2:1
  - Control Arm – PVI
  - Treatment Arm – PVI + Ligation of LAA with Lariat System
- **Number of Subjects and Sites**
  600 subjects; 65 sites, all U.S.
- **Study Duration**
  12 month monitoring and then 5 year follow-up of all subjects

PRIMARY ENDPOINTS

- **Effectiveness** - Freedom from episodes of Afib >30 seconds at 12 months post index pulmonary vein isolation
- **Safety** - Primary safety endpoint for the study is 10% freedom from MAE's as adjudicated by the CEC for the period from the procedure through 30 days
- Time Frame: 12 months following pulmonary vein isolation catheter ablation procedure, measured by 24-hour Holter monitoring

amaze

LARIAT® Clinical Trial

HIGHLIGHTS

- Acquired SentreHEART® August 2019
- Trial enrollment completed December 2019
- Final Patient follow-up expected 1H 2021
- Expect PMA submission to FDA in 2H 2021
- Anticipated PMA approval in 2022-2023

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Innovative and Expanding Product Portfolio




Ablation

- ISOLATOR® SYNERGY™ CLAMP
- cryoICE® CRYOABLATION PROBE
- EPI-SENSE® DEVICE
- cryoSPHERE® CRYOABLATION PROBE
- **Future Product Launch:** ISOLATOR SYNERGY ENCOMPASS® CLAMP

2000 to 2015: Foundation in surgical Afib tools
Future pipeline expansion across franchises

2015 and Beyond: Building the future in minimally invasive therapies
Innovation toward less invasive, simpler, and more efficient products

Appendage Management

- ATRICLIP® FLEX DEVICE
- ATRICLIP PRO® DEVICE
- ATRICLIP PRO•V® DEVICE
- ATRICLIP FLEX•V® DEVICE
- LARIAT® DEVICE





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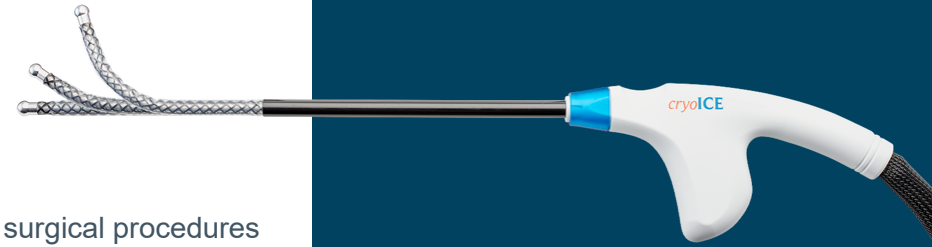
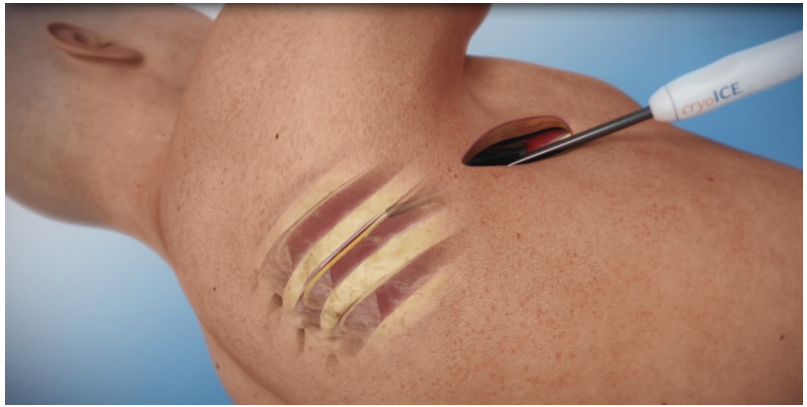
SPOTLIGHT: Cryo Nerve Block for Pain Management



Therapy Overview

- Long-lasting pain management therapy, designed for use in thoracic surgical procedures
- Temporarily stops transmission of pain signals coming from the chest wall during surgery
- Nerve “scaffolds” remain intact allowing axons to regenerate and restore nerve function over time
- Applicability in a wide variety of thoracic surgical approaches (thoracotomy, video-assisted, robotic) and procedures (resection, transplant, thoracoabdominal, surgical rib fixation, pectus repair)



HIGHLIGHTS

- $350M U.S. market opportunity*
- Dedicated commercial team established in 2019 and expanding
- Q1 2019 launch of cryoSPHERE probe
- **Q4 2020 label expansion includes adolescent patients as young as 12 years of age**
- Continuing to gather data to support evidence development for therapy
- Potential to contribute to combatting the opioid epidemic – 1 in 7 thoracic surgery patients become reliant upon opioids after their procedure[14]

** Market opportunity based on internal estimates and research, as well as from publicly available information.*

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Aligning Expertise with Opportunity

Commercial Teams

54 U.S. Sales Managers
Covering 1,000+ accounts

64 U.S. Clinical Specialists
providing case support

30 U.S. Dedicated MIS+Lariat team members

14 U.S. Specialists
Cryo Nerve Block Team

33 U.S. Education Support
Physician + Field

39 International Sales and Clinical Support

AtriCure Pillars

Foundation of our past and strengthening our future

Innovation

Expanding pipeline to drive Open ablation penetration and build MIS market

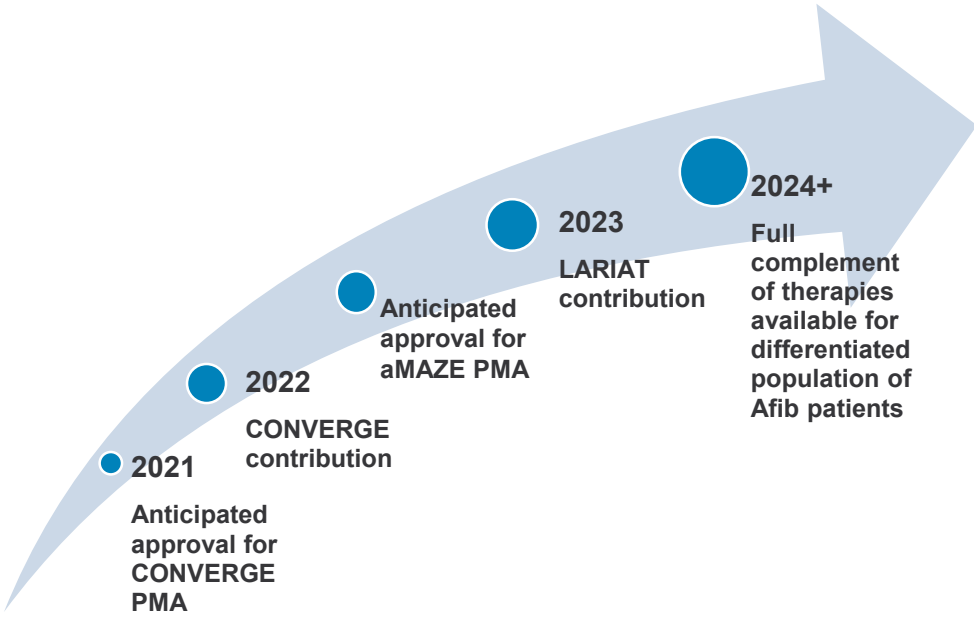
Clinical Science

CONVERGE & aMAZE trials are complimentary and differentiated as the ONLY randomized control trials for advanced Afib

Education

Significant investment in physician education, providing multiple training options

Expecting An Exciting Future…



Core double-digit growth business with accelerators in EP landscape (Hybrid Convergent + aMAZE)

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