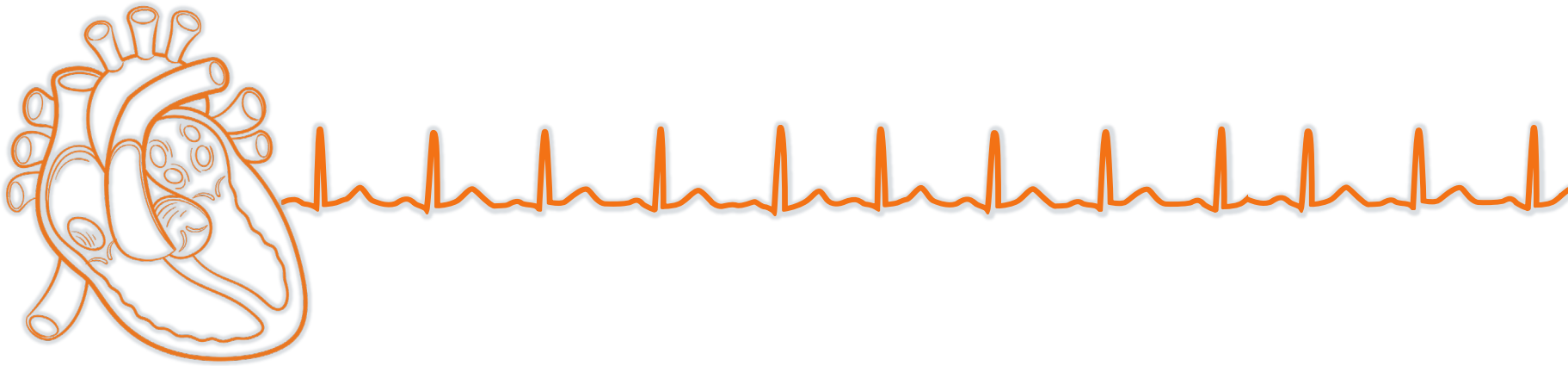
AtriCure
Investor Presentation

Creating a World Class Afib Platform



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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 AtriCure will be able to successfully implement commercialization plans for CONVERGE; 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 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; whether AtriCure’s ongoing clinical trials will meet the specified endpoints and will be approved by FDA and any other required regulatory authorities; 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.

Non-GAAP Financial Measures

To supplement AtriCure's consolidated financial statements prepared in accordance with accounting principles generally accepted in the United States of America, or GAAP, AtriCure provides certain non-GAAP financial measures as supplemental financial metrics in this presentation.

Adjusted EBITDA is calculated as Net loss before other income/expense (including interest), income tax expense, depreciation and amortization expense, share-based compensation expense, acquisition costs, legal settlement costs, and change in fair value of contingent consideration liabilities. Management believes in order to properly understand short-term and long-term financial trends, investors may wish to consider the impact of these excluded items in addition to GAAP measures. The excluded items vary in frequency and/or impact on our continuing results of operations and management believes that the excluded items are typically not reflective of our ongoing core business operations and financial condition. Further, management uses adjusted EBITDA for both strategic and annual operating planning. Adjusted loss per share is a non-GAAP measure which calculates the net loss per share before non-cash adjustments in fair value of contingent consideration liabilities and legal settlement costs.

The non-GAAP financial measures used by AtriCure may not be the same or calculated in the same manner as those used and calculated by other companies. Non-GAAP financial measures have limitations as analytical tools and should not be considered in isolation or as a substitute for AtriCure's financial results prepared and reported in accordance with GAAP. We urge investors to review the reconciliation of these non-GAAP financial measures to the comparable GAAP financials measures, and not to rely on any single financial measure to evaluate our business.

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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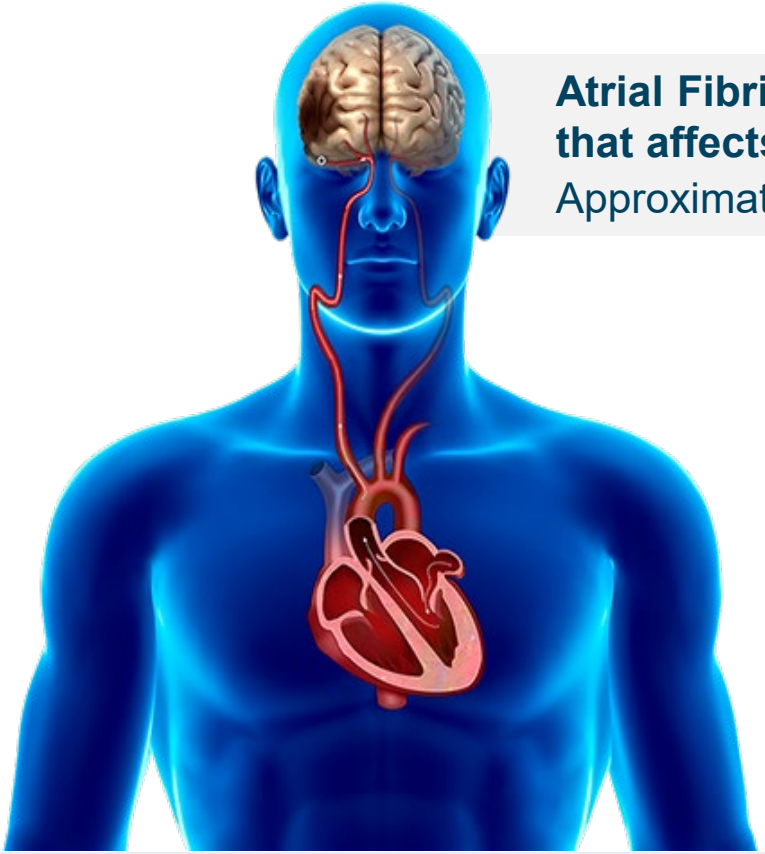
Afib: a Serious Problem



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
  - Hybrid Convergent + AtriClip®, DEEP

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
- Enhanced 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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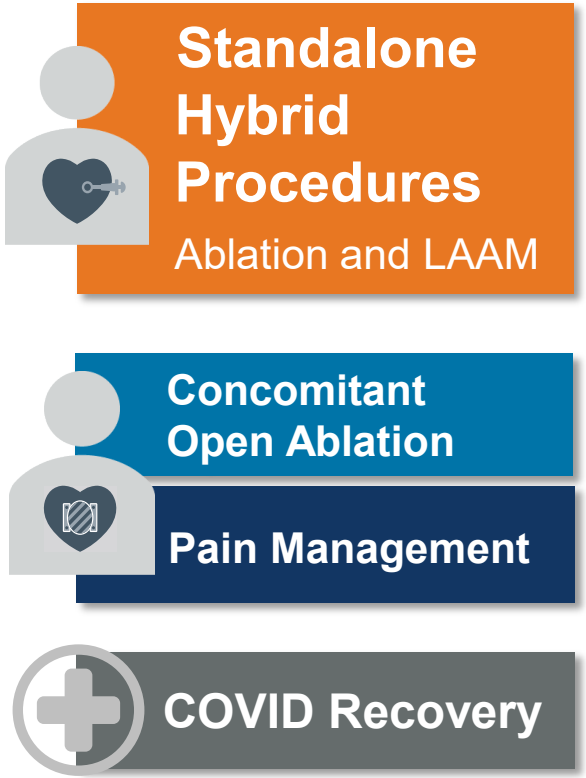
2021 Priorities: Building for the Future



- **CONVERGE PMA approval and launch**
  - Deepen volumes at existing sites and train new accounts
  - Addition of AtriClip to the Convergent procedure
  - Continued global expansion of commercial and training teams
- **EnCompass® Clamp clearance and launch**
- **Expansion of commercial team, training programs**
- **Supporting our people, patients and partners**

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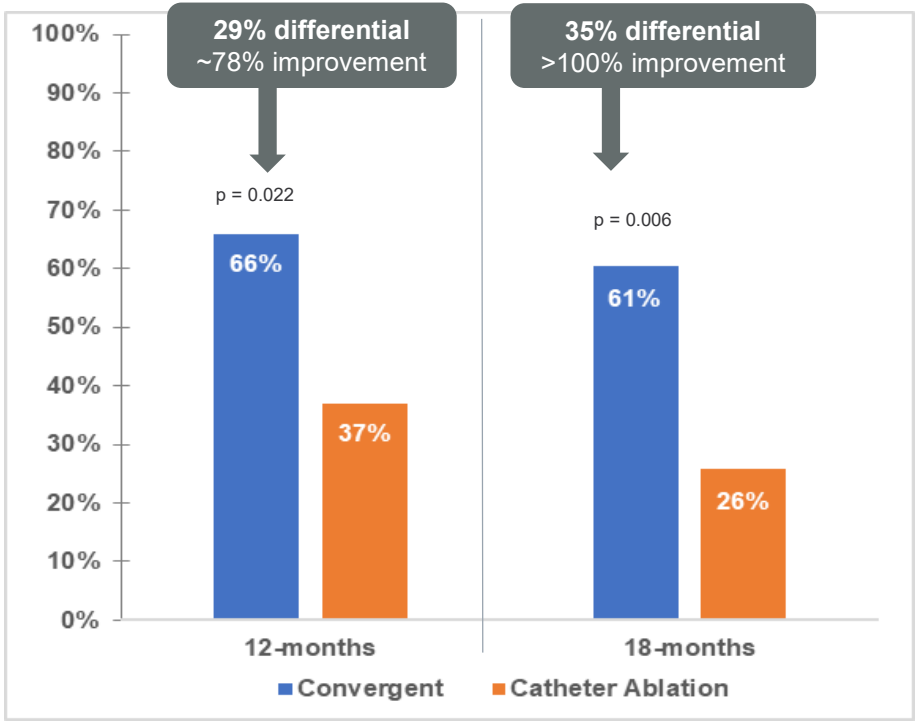
CONVERGE: Long-standing Persistent Afib Patient Analysis

Freedom from AF/AFL/AT from 3-month blanking period through 12-months and 18-months



- **Superior outcomes with hybrid Convergent procedure** when compared to endocardial catheter ablation alone in patients with drug refractory long-standing persistent Afib
- Data for long-standing persistent patients in the trial demonstrated **compelling efficacy and durability**
- **Improved EP lab efficiency demonstrated** by reduction in endocardial ablation time as a result of adding epicardial ablation

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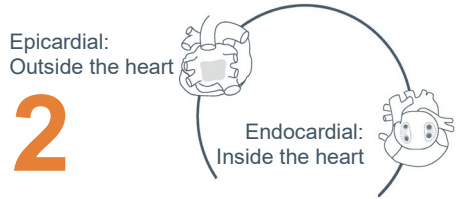
Benefits of the EPi-Sense System and Hybrid AF Therapy

Benefits based on 7-day continuous rhythm monitoring at 18-months post procedure



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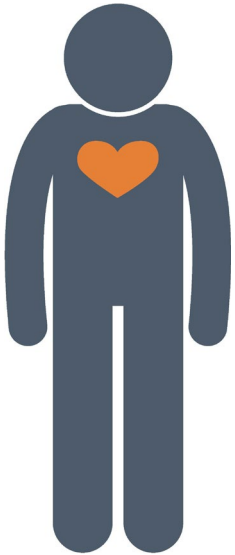
TRIGGER AREAS TARGETED
where atrial fibrillation begins

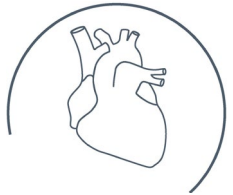
Emphasizes value of team-based approach for advanced AF treatment

≥90%

LESS TIME IN AF
For most patients at 1 year



Patients in the Hybrid AF Arm report feeling better, both physically + emotionally[6]



More than

2x AS EFFECTIVE AT STOPPING AA
(vs endocardial RF ablation alone)

Additive to endocardial catheter ablation

Patients are

2x MORE LIKELY TO NO LONGER NEED AF MEDICATION
(vs endocardial RF ablation alone)

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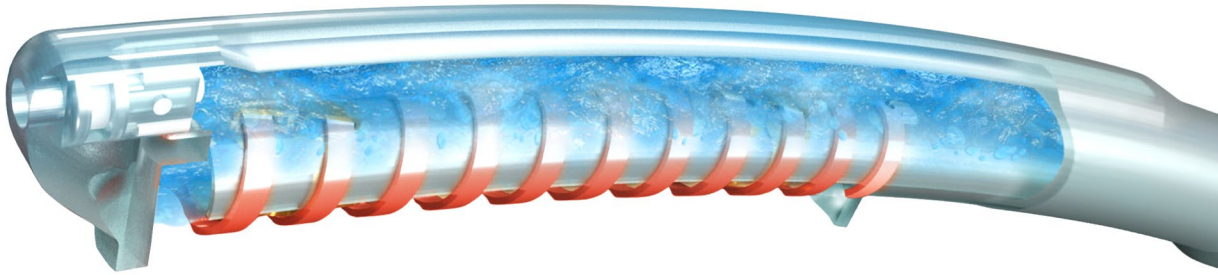
Commercial Strategy for the EPi-Sense System



TARGET
Drive utilization with existing and new sites

BUILD
Train and develop programs, build referral channel

LEVERAGE
Add AtriClip to Hybrid AF Therapy

EXPAND
Grow commercial + training teams, broaden internationally

AMPLIFY
Spread awareness of Hybrid AF Therapy to patients

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Innovative and Expanding Product Portfolio





Ablation

ISOLATOR® SYNERGY™ CLAMP

cryoICE® CRYOABLATION PROBE

EPI-SENSE® DEVICE

cryoSPHERE® CRYOABLATION PROBE

2H 2021 Product Launch: ISOLATOR SYNERGY ENCOMPASS® CLAMP

Continued innovation toward less invasive, simpler, and more efficient products

LAA Management

ATRICLIP® FLEX DEVICE

ATRICLIP PRO® DEVICE

ATRICLIP PRO•V® DEVICE

ATRICLIP FLEX•V® DEVICE




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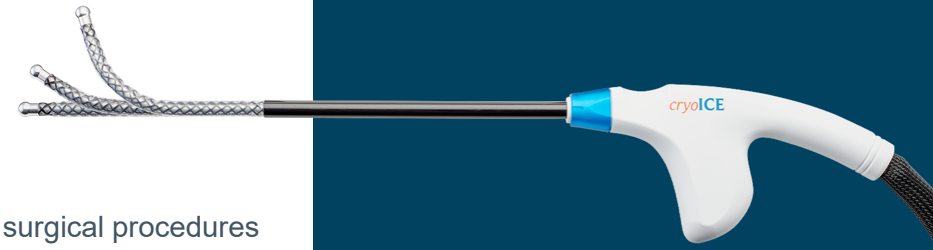
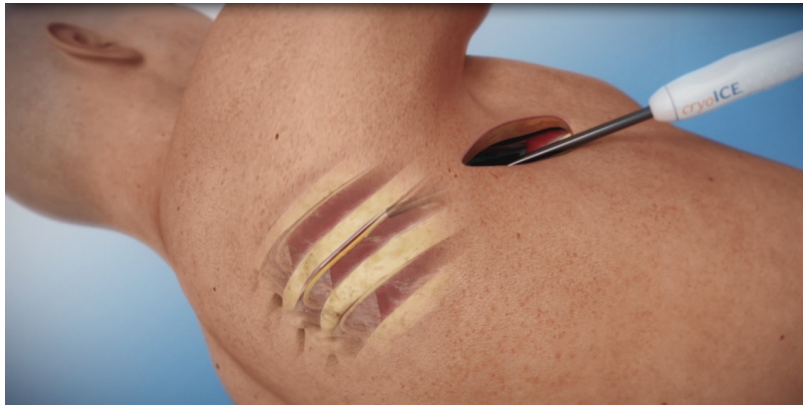
SPOTLIGHT: Cryo Nerve Block for Pain Management



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**
- **~7% of 2021 YTD worldwide revenue**
- 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[7]

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

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SPOTLIGHT: Isolator Synergy EnCompass® Clamp

Product Overview

- **FDA 510(k) clearance to ablate cardiac tissue during surgery**
- Designed with same benefits of the AtriCure Isolator Synergy Clamps:
  - + Parallel closure
  - + Uniform pressure
  - + Synergy algorithm provides custom power
- Compatible with existing AtriCure RF generator

A simpler and faster approach to ablating the heart in open procedures

HIGHLIGHTS

- FDA 510(k) clearance July 2021
- Limited initial release beginning 3Q 2021
- Full commercial launch expected late 2021
- Continue to drive penetration of cardiac surgery market

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Key Investments Driving Growth

AtriCure Pillars

Foundation of our past and strengthening our future

Innovation

Expanding pipeline to drive Open ablation penetration and build MIS market

Clinical Science

Hybrid AF Therapy proven by CONVERGE trial: a complimentary and differentiated approach for advanced Afib

Education

Significant investment in physician education, providing multiple training options

Aligning Expertise with Opportunity

Dedicated commercial and education teams

U.S. Cardiac

54 Sales Managers and 64 Clinical Specialists

U.S. Hybrid Therapies

35 Sales and Clinical Specialists

U.S. Cryo Nerve Block

21 Sales and Clinical Specialists

U.S. Sales Leadership

23 Area Directors across our specialized teams

U.S. Education

35 Physician + Field Supporting Roles

International

40 Sales and Education Professionals

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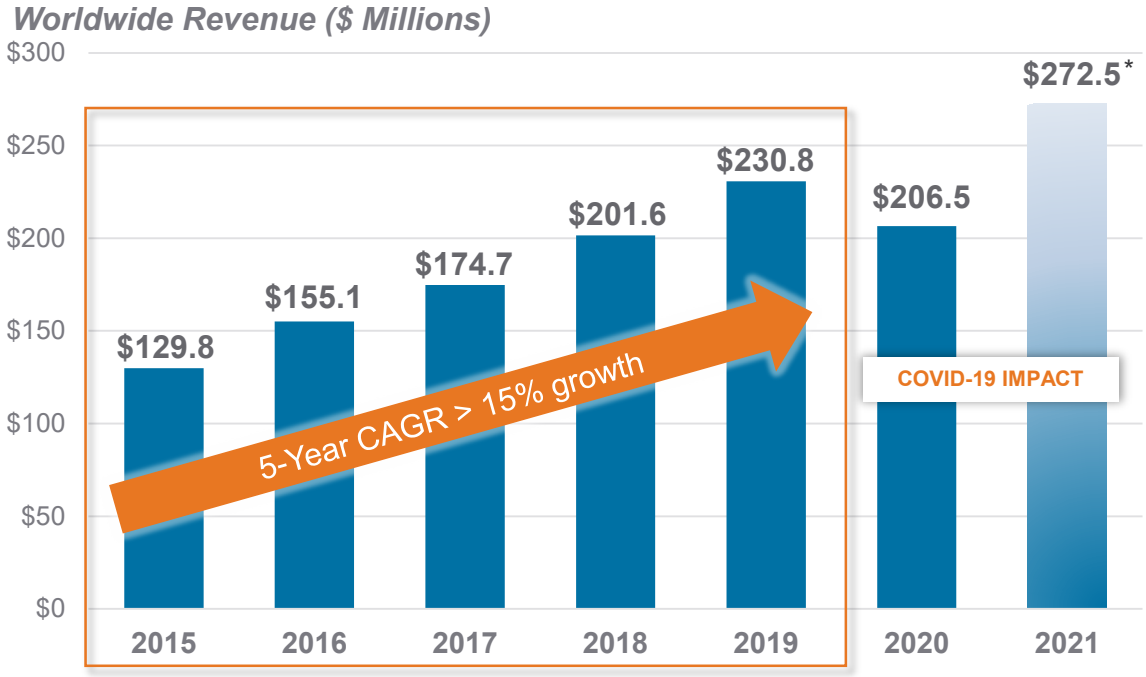
History of Strong Financial Performance



Revenue Growth	20.8%	19.5%	12.6%	15.4%	14.5%	(10.5%)
Gross Margin	71.6%	71.6%	72.2%	73.0%	73.8%	72.3%

Historical Results

Consistent Revenue Growth
Strong history of double-digit YoY growth pre-COVID-19

Steady Improvement to Gross Margin
pre-COVID-19

*Based on midpoint of 2021 guidance

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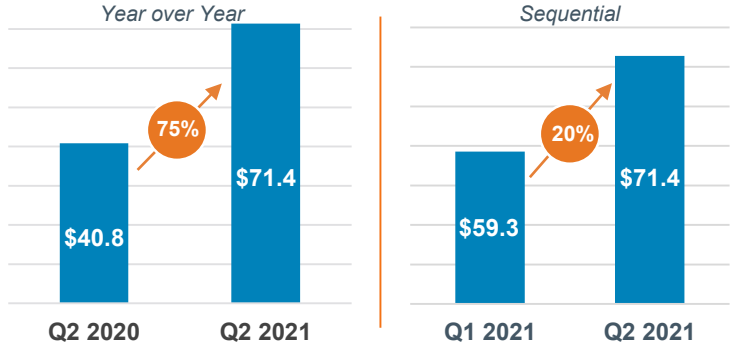
Second Quarter 2021 Financial Highlights

WORLDWIDE REVENUE* ($M)



- COVID-19 receding in major markets
- Cardiac surgery procedure volumes stabilizing and demand growing
- Strong activity across product lines
- U.S. revenue of $60.1M (84% of revenue)
- International revenue of $11.3M (16% of revenue)

KEY METRICS*

	Q2 2020	Q2 2021
GROSS MARGIN	67.7%	75.8%
ADJ. EBITDA	($6.1M)	($2.7M)
ADJ. LOSS PER SHARE	($0.38)	($0.30)
CASH & INVESTMENTS	$248M	$230M

FULL YEAR 2021 GUIDANCE

- Worldwide Revenue of $270M to $275M
- Adjusted EBITDA loss of ~$10M
- Adjusted loss per share of ~$1.20

** 2021 financial results are preliminary and unaudited.*

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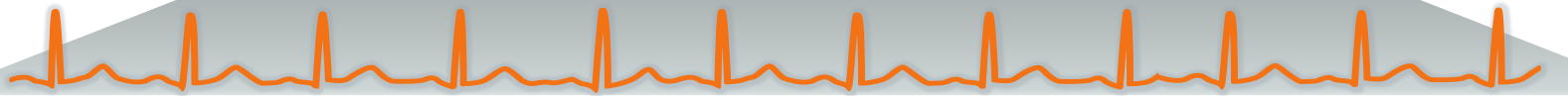
An Exciting Future Ahead

2021	2022	2023	2024+
CONVERGE PMA and Hybrid AF Therapy launch		Hybrid AF Therapy contribution	Platform of therapies for differentiated population of Afib patients

ACCELERATING GROWTH IN EP LANDSCAPE



CORE TECHNOLOGIES

Surgical Ablation || AtriClip || Cryo Nerve Block

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Supplemental Information

References for any comments, statistics, or figures in this presentation are available upon request.

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Key Investment Rationale

Large Markets
Addressing an underserved and growing patient population

- Approximately 33 million Atrial Fibrillation patients globally, with majority having advanced forms of the disease[1]
- Multibillion dollar annual market opportunity
- Current standard of care for intervention (catheter ablation) does not adequately address the most advanced forms of the disease

Strong Portfolio
Existing products and solutions driving consistent growth

- Strong history of double-digit revenue growth, driven by great products, clinical evidence, commitment to education, and societal guideline support
- Only PMA product for the concomitant surgical treatment of Afib
- The AtriClip device is the most widely used Left Atrial Appendage device with approximately 300,000 sold to date
- Diverse and expanding product portfolio from internal development and acquisitions

Bright Future
Novel therapies supported by growing body of clinical evidence

- Only PMA product for treatment of LS persistent Afib with Hybrid AF Therapy
- Growing pain management business to address pain associated with surgery
- Early in market development process – evolution to minimally invasive therapies will drive growth, diversifying and accelerating in 2022 and beyond

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COVID-19 Response

Positioning AtriCure for long-term growth

Health & Safety

Provide a safe work environment for our employees

- Enabling employees to work remotely and evaluating hybrid workplans
- 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

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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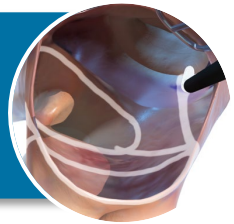
Two Distinct Patient Profiles

Referring Physician:
GP, Cardiologist

STRUCTURAL HEART ISSUE
Surgery required – Afib corrected at same time (Valve, CABG)

GUIDELINES[8]
Surgical Ablation is **RECOMMENDED**
LAA management is **REASONABLE**

Concomitant Open Procedures
(Ablation/LAAM)



NO STRUCTURAL ISSUE
Afib is primary concern

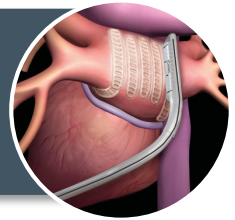
Intervention is better choice

Medicine is effective

Paroxysmal (occasional) → Persistent → Long-Standing Persistent

Type of Afib matters!
Afib is a progressive disease

Standalone Hybrid Procedures
(Ablation/LAAM)
Catheter often first line of treatment



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US Concomitant Market Opportunity

Estimated **Afib** Opportunity in Cardiac Surgery	
Annual Cardiac Surgeries[12]	300,000
Pre-Operative Afib Rate[10]	~28%
Cardiac Opportunity – Pre-Op Afib	85,000
ASP Mix (Ablation and Appendage Management)[13]	$4,500
Open Cardiac Surgery Opportunity – Afib	**$382M**

Estimated **Non-Afib** Opportunity in Cardiac Surgery	
Annual Cardiac Surgeries	300,000
Pre-Operative Non-Afib Rate	~72%
Cardiac Opportunity – Pre-Op Afib	215,000
ASP Mix (Appendage Management ONLY)[13]	$1,750
Open Cardiac Surgery Opportunity – Non-Afib	**$376M**

- US annual cardiac surgery volume steady over the past 5 years with shifts in procedure types[9]
- Pre-Op Afib occurs frequently in cardiac surgery patients[10]
- New onset Post-Op Afib is a well-documented complication of cardiac surgery, even if patients do not present with pre-op Afib[11]

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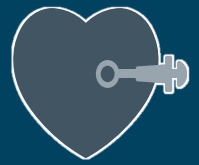
US Standalone Market Opportunity

Estimated **Standalone** Afib Opportunity	2020	Projected 2025
Long-standing Persistent Afib Catheter Ablation[16]	25,000	45,000
ASP Mix (Ablation + Appendage Management)[13]	$15,000	$15,000
Immediate Standalone Afib Opportunity	**$375M**	**$675M**
Additional penetration Long-standing Persistent Afib patients (estimated at 5% penetration)	150,000	175,000
ASP Mix (Ablation + Appendage Management)[13]	$15,000	$15,000
Incremental Standalone Afib Opportunity (estimated at 5% penetration)	**$2B+**	**$3B+**



Market opportunity in analysis at left considers:

- Addition of ablation and LAAM to existing catheter ablation procedures
  - Catheter ablation procedures have grown 10-15% annually[14]
- Incremental penetration of advanced Afib patient population
  - Today, long-standing persistent Afib population represents more than 3 million patients in the United States, expected to grow to more than 4.4 million by 2025[15]
- ASP Mix reflects both ablation and AtriClip

CONVERGE Overview

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

Achieved statistical superiority for primary endpoints

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 November 2020
- Trial results published in *Circulation: Arrhythmia and Electrophysiology* November 2020
- Long-standing persistent Afib patient sub-group analysis presented at 26th Annual Atrial Fibrillation (AF) Symposium January 2021 and 14th Annual Western AF Symposium February 2021
- **FDA approval of EPi-Sense System for treatment of long-standing persistent Afib April 2021**

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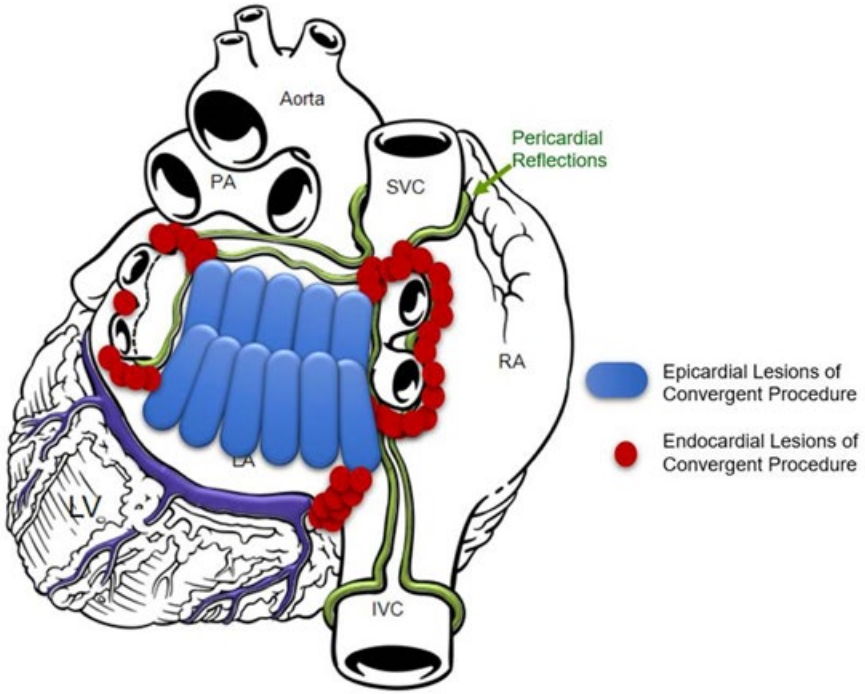
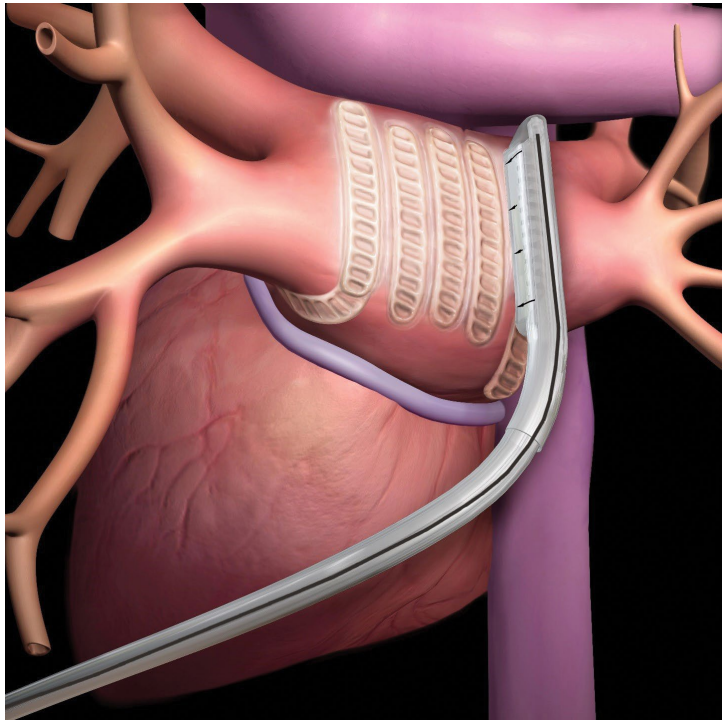
Hybrid AF Therapy: the Convergent Procedure





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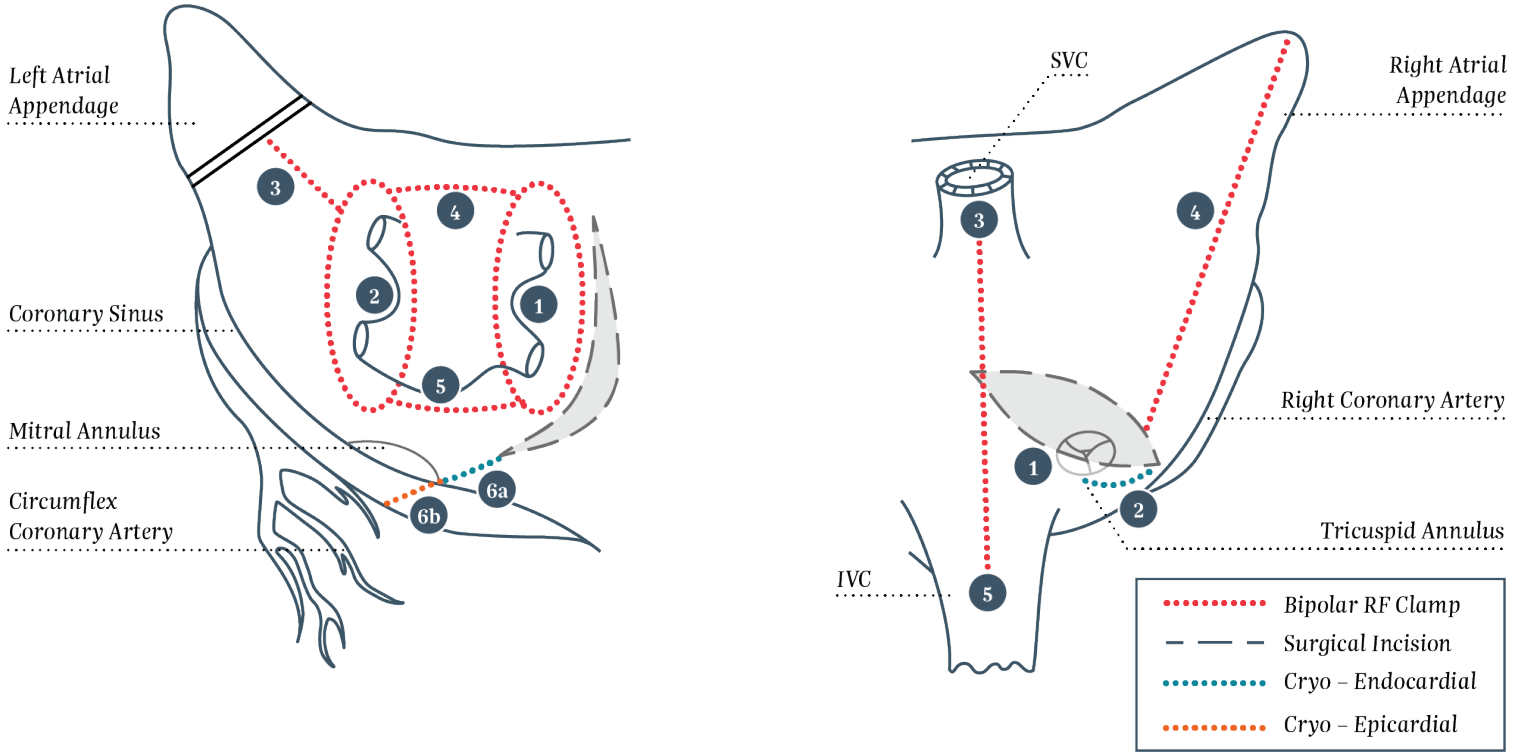
The Cox-Maze IV Procedure



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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 in 1H 2021
- Unblinded to trial results in July 2021; trial met safety goal but did not meet the primary effectiveness endpoint

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References and Abbreviations

Note	Reference
1	Worldwide Epidemiology of Atrial Fibrillation: A Global Burden of Disease 2010 Study
2	The American Journal of Cardiology (2013), 112: 1142-1147
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Key Abbreviations	
Afib or AF	Atrial Fibrillation
AA	Atrial Arrythmia
AAD	Anti-Arrhythmic Drugs
AFL	Atrial Flutter
AT	Atrial Tachycardia
CABG	Coronary Artery Bypass Graft
CEC	Clinical Events Committee
EP	Electrophysiologist
FDA	Food & Drug Administration
LAA	Left Atrial Appendage
LAAM	LAA Management
LS	Long-standing
MAE	Material Adverse Event
PMA	Pre-Market Approval
PVI	Pulmonary Vein Isolation
RF	Radio Frequency

AtriCure