UNITED STATES SECURITIES AND EXCHANGE COMMISSION

WASHINGTON, D.C. 20549

FORM 8-K

CURRENT REPORT

PURSUANT TO SECTION 13 OR 15(d) of the SECURITIES EXCHANGE ACT OF 1934

Date of Report (Date of earliest event reported): August 18, 2017

ATRICURE, INC.

(Exact name of registrant as specified in charter)

Delaware (State or other jurisdiction of

incorporation)

000-51470 (Commission File Number)

34-1940305

(IRS Employer Identification No.)

7555 Innovation Way
Mason, OH
(Address of principal executive offices)

45040

(Zip Code)

Registrant's telephone number, including area code: (513) 755-4100

Not Applicable

(Former name or former address, if changed since last report)

	eck the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant er any of the following provisions (see General Instruction A.2. below):
	Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)
	Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)
	Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))
	Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))
	icate by check mark whether the registrant is an emerging growth company as defined in Rule 405 of the Securities Act of 3 (§230.405 of this chapter) or Rule 12b-2 of the Securities Exchange Act of 1934 (§240.12b-2 of this chapter).
Eme	erging growth company \square
	n emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange . \Box

Item 7.01. Regulation FD Disclosure

On August 18, 2017, AtriCure, Inc. (the "Company") posted an investor presentation on its website http://ir.atricure.com. A copy of the investor presentation is furnished as Exhibit 99.1 to this Current Report on Form 8-K and is incorporated herein by reference.

The Company's presentation discloses certain financial results both in accordance with generally accepted accounting principles ("GAAP") and on a non-GAAP basis with adjustments for certain items. The Company's management believes that presentation of these non-GAAP financial measures and their related reconciliations are useful to investors because the non-GAAP financial measures provide investors with a basis for comparing the results to financial results from prior periods.

Information in the presentation contains forward-looking statements regarding future events and performance of the Company. All such forward-looking statements are based largely on the Company's experience and perception of current conditions, trends, expected future developments and other factors, and on management's expectations, and are subject to risks and uncertainties that could cause actual results to differ materially, including, but not limited to, those factors described in the presentation and in the Company's filings with the Securities and Exchange Commission. The Company disclaims any intention or obligation to update or revise any financial or other projections or other forward-looking statements, whether because of new information, future events or otherwise.

The information in Item 7.01 of this Form 8-K and in the presentation attached as Exhibit 99.1 is being furnished and shall not be deemed "filed" for purposes of Section 18 of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), or otherwise subject to the liabilities of that Section. The information in Item 7.01 of this Form 8-K and Exhibit 99.1 shall not be incorporated by reference in any filing (whether made before or after the date hereof) or any other document under the Securities Act of 1933, as amended, or the Exchange Act, except as expressly set forth by specific reference in any such filing or document.

Item 9.01 Financial Statements and Exhibits.

(d) Exhibits

No. Description

99.1 Investor Presentation

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

ATRICURE, INC.

Dated: August 18, 2017 By: /s/ M. Andrew Wade

M. Andrew Wade Senior Vice President and Chief Financial Officer





Forward Looking Statements

This presentation contains "forward-looking statements"—that is, 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 our actual results to be materially different than those expressed in our forward-looking statements, visit http://www.atricure.com/fils as well as our Annual Reports on Form 10-K and Quarterly Reports on Form 10-Q which contain risk factors. Forward-looking statements address our expected future business, financial performance, financial condition and results of operations, and often contain words such as "intends," "estimates," "anticipates," "hopes," "projects," "plans," "expects," "seek," "seelives," "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. With respect to the forward-looking statements, we claim the protection of the safe harbor for forward-looking statements contained i

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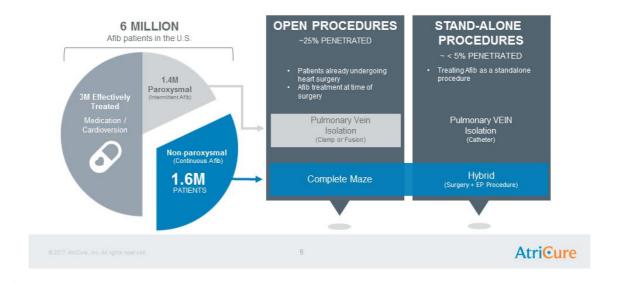
Key Investment Rationale

Unique company addressing an underserved and growing population of patients	 ~17 million chronic Afib patients globally Current standard of care does not adequately address this population
Portfolio of Standalone/Minimally Invasive (MIS) opportunities to drive long term growth	CONVERGENT approach – Over 8K procedures to date; CONVERGE trial is top priority DEEP / FUSION approach – Over 30K procedures to date; DEEP Trial underway
AtriClip business is high growth and complements multiple procedures	Most widely used Left Atrial Appendage (LAA) device with over 110K sold to date ATLAS trial underway for non-Afib patients Delivering novel MIS approaches annually, driving volume and ASP growth
Can deepen penetration of open heart ablation through training	Product improvements and salesforce re-focus will drive growth Cash generation of product line funds development
Plan to be EBITDA profitable in 2018	Enables growth funding without dilution

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Two Distinct Patient Profiles



AtriCure Product Portfolio



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U.S. Market - \$1 Billion Opportunity 6 million Afib patients in the U.S. ADDRESSABLE MARKET OPPORTUNITY OPENABLATION S260M Market applies to major forms of structural heart surgery (CABG, AVR, MVR) MVR) Market applies to both open chest and minimally-invasive procedures MIS ABLATION \$480M Market applies to both open chest and minimally-invasive procedures Wish ABLATION \$480M Market applies to both open chest and minimally-invasive procedures

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Business Evolution to Drive Long Term Growth



U.S. Open Ablation



Competitive Advantages

- Labeling advantage in the U.S.
- Robust portfolio across two technology
- Solid gross margins
- Leader in market development via physician education



OPEN ABLATION AtriCure has the only ON-LABEL product (FDA approved)

Growth will be driven by increased market penetration

Growth Drivers

- STS/HRS Class 1 recommendations
- Focused sales force
- Major emphasis on physician education and training
- Continued market penetration driven by CABG opportunity



U.S. LAA Closure Management

OPEN & MIS

\$290M US Total Market \$90M Open Ablation \$200M MIS Ablation

Open LAA Growth Drivers

- Broadening awareness of benefits of LAA management (science and society endorsement)
- Technology-driven benefits (ease of use and closure)
- ATLAS trial studying prophylactic treatment for non-Afib patients

MIS LAA Growth Drivers

- PRO2 continues to gain traction w/ higher ASP
- Planned launch of a more versatile PRO V in 2017
- Future opportunity for adding MIS Clips to other procedures

LAA CLOSURE MANAGEMENT

Highest growing franchise – over 40% CAGR for past three years Over 110K AtriClip Systems implanted worldwide



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U.S. MIS Ablation

\$480M

US Total Market

High growth opportunity in underserved and underdeveloped market

Competitive Advantages

- Favorable reimbursement environment
- · High gross margin portfolio
- · Pipeline of continued development
- Leveraging expertise in epicardial ablation to serve non-paroxysmal opportunity



Growth Drivers

- CONVERGE IDE trial for Afib labeling expansion
- Cardiologists looking for definitive treatment solutions
- Tough-to-serve patient population lends itself to multi-disciplinary therapy

MIS ABLATION

Upcoming clinical data will drive sustained market growth



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Summary of U.S. - Large, Underpenetrated Market Opportunity



U.S. GROWTH DRIVERS...

- Continued penetration into the Open market
- Growing MIS clinical data and continuing commercial execution
- Clip business complementing growth of Open / MIS segments

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Aligning Expertise With Opportunity

Sales structure and talent - maximizing productivity

- Shifting headcount growth from Regional Sales Managers to Ablation/Clinical Specialists
 - Solid case coverage while managers build relationships, broaden adoption
- . Onboarding and training of current team is a top priority
- Each Area Includes:
 - 5-6 Regional Sales Managers
 - 4-6 Clinical Specialists
 - 1-2 Minimally Invasive Manager(s)



Key Sales Positions	2013	2016	2017E
Area Directors	8	11	11
Regional Sales Managers	37	53	55
Ablation/Clinical Specialists	22	44	53
Minimally Invasive Manager	rs 0	10	14



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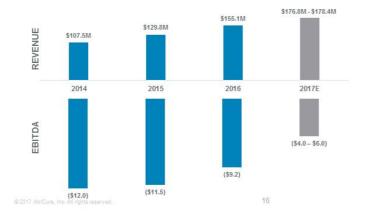


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Financial Performance

Revenue growth expectations fueled by stability in OPEN ablation and high growth in MIS and LAA Closure



- Cash, cash equivalents, and investments position of \$35M as of June 30, 2017
- Sufficient capital to operate the business to cash flow generation
- Historical gross margins
 70 72% with expansion
 opportunity
- Expect top line constant currency growth of 14 – 15% for 2017, or ~\$177 – 178 million
- Expect \$4M \$6M EBITDA loss for the year
- On the cusp of profitability and committed to positive full year EBITDA profit for 2018



Investor Highlights

Leader in \$1B US addressable market for atrial fibrillation solutions



Market Leadership

- Only on-label (FDA) product in the persistent/long-standing persistent Afib market
- Robust product portfolio and pipeline focused on minimally-invasive solutions
- Most widely adopted LAA product on the market



Strong Growth Opportunity

- Large and growing market; vastly underpenetrated
- Evolution to minimally invasive therapies will drive growth
- Diverse profile of solutions to treat persistent Afib



Solid Foundation

- 24% revenue CAGR (2014-2017E) with improving profitability
- Commitment to innovation, education, and clinical science
- On the cusp of EBITDA profitability and positive cash flow

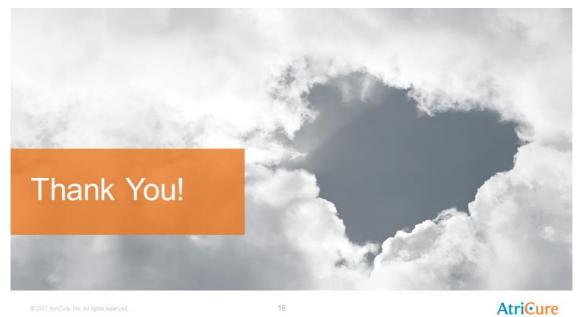


GROWTH DRIVERS

- Updated society guidelines recommend treatment of Afib for specific procedures
- Continued penetration in the Open market
- Growing MIS clinical data and pipeline portfolio of solutions
- · Clip business driving growth
- Strengthening commercial leadership and team
- · International expansion



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Supplemental Information

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Franchise / Market Overview

Focus Areas	2017 First-Half Revenue	2016 Full-Year Revenue	Global Market Potential
OPEN Ablation (Concomitant)	\$32.5M US +13%	\$58.0M US +8%	\$770M Annually
OPEN Clip	\$11.8M US +18%	\$20.4M US +17%	\$275M+ Annually
MIS Ablation	\$17.0M US +16%	\$31.2M US +44%	\$2B+ Annually
MIS Clip	\$6.3M US +51%	\$9.9M US +43%	\$850M+ Annually
International	\$17.7M +8% (9% CC)	\$32.7M +19% (19% CC)	Included above
Overall	\$86.5M +14% (+15%CC)	\$155.1M +20% (+20%CC)	\$3.5B+ Annually

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Franchise / Business Overview

Focus Areas	Products	Keys to Success	Trials/Data
OPEN Ablation (Concomitant)		FDA PMA label for Afib (2011) Advanced Training — CABG/AVFI/Fellowships Conversions and add-on sales - cryoFORM adoption Guideline changes w/ Societies Synergy II.	ABLATE IDE = PMA PMA Post Approval Study (365 Patients) STS/Medicare retrospective studies Guidelines key – supporting many grants
OPEN Clip		EXCLUDE trial (510k data) Continued education and awareness Tie to ablation growth New City in 2018 ATLAS and other data	EXCLUDE - Complete ATLAS - Enrolling
MIS Ablation	Coty	Trials – DEEP and CONVERGE Collaborative care Convergent growth	CONVERGE IDE DEEP IDE
MIS Clip		Awareness Trial Product expansion (Pro2, Pro-V)	Stroke Safety Feasibility Complete No trial planned
International	,	Product expansion in Asia Reimbursement in EU Sales team coverage	CEASE AF (DEEP for EU) HISTORIC AF (Complete) Several Clip registries

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AtriCure Portfolio Designed to Treat Afib

2016 U.S. REVENUE BY PRODUCT CATEGORY



NEWI 2017 STS and HRS guidelines recommend surgical ablation for the treatment of Afib at the time of MVR, AVR, and CABG OPEN
NEW! 2017 STS
Guidelines include LAA
Closure Management as
a reasonable procedure
to minimize risk of stroke

Strong product line with new product innovations continuing to drive the shift to MIS procedures CONVERGE trial underwayto supportFDA approval of the EPi-Sense device for the treatment of persistent Afib

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Keys to Market Development



Expanding Product Portfolio

- Launched 8 products in last three years (2 from acquisitions)
- Defined track record of organic and inorganic execution
- · Pipeline focus across all franchises
- Innovation toward less invasive, simpler, easier to use, and more efficient products
- Strong commercial pricing discipline for new product introductions





Long-term Goal

Continued expansion of products in both core and new markets



Increase Education and Awareness

Investment

- · Significant resources toward physician education
- Multiple options including didactic, hands-on, proctoring, and case observations

Steering Committee

· Comprised of highly regarded KOLs

Strong Network

· Established strong network of revered physician trainers

Society Involvement

· AATS Fellowships, STS and EACTs endorsed training program

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Trained over 2,000+ physicians worldwide

Helping physicians address the growing Afib epidemic



Advancing Clinical Outcomes Robust clinical program with several studies underway to generate clinical evidence

CONVERGE PIVOTAL	Trial designed to support FDA approval of EPi-Sense device specifically for the treatment of persistent Afib through an abdominal approach	
DEEP PIVOTAL	Trial designed to support FDA approval of various devices specifically for the treatment of persistent Afib through a bi-lateral totally thoracoscopic approach	
ATLAS	Trial designed to compare impact of surgical LAA closure using AtriClip LAA Exclusion Systems on postoperative Afib patients	
CEASE AF	Randomized trial of hybrid bi-lateral approach (same as DEEP) versus catheter ablation in persistent and longstanding persistent Afib	



CONVERGE Pivotal Study



Trial designed to support FDA approval of EPi-Sense device specifically for the treatment of persistent Afib

STUDY DESIGN

Summary

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

Number of Subjects and Sites

Up to 153 subjects Up to 30 sites (27 US and 3 OUS)

Study Duration

5 year follow-up of all subjects

PRIMARY ENDPOINTS

Effectiveness

Effectiveness
The 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
The primary safety endpoint for the study is 12% freedom from MAE's as adjudicated by the CEC for the procedural to 30 day post procedure time period.



Q2 2017 CONVERGE UPDATE

- · Principal Investigator announced in Q1 2017
- · Total of 21 sites enrolling
- · 74 patients enrolled (Q2 2017)
- · Enrollment completion target: 2018



Guidelines to Fuel Adoption

2017 STS Guidelines

- Applies to ALL-COMER Afib patients. Previously only "symptomatic patients refractory or intolerant to at least one AAD".
- Surgical Ablation is RECOMMENDED not just reasonable. It doesn't increase operative risk.
- LAA Management is mentioned for the first time in the STS Guidelines; LAAM is reasonable in conjunction with ablation or alone during cardiac surgery.
- Acknowledges the positive impact of hybrid ablations.

2017 HRS Guidelines

- Mitral Valve Replacement is RECOMMENDED for all symptomatic patients refractory or prior to antiarrhythmic drugs.
- Surgical Ablation is RECOMMENDED for CABG and AVR patients who had initiated antiarrhythmics prior to surgery.
- Stand-Alone / Hybrid is REASONABLE for LS persistent symptomatic patients refractory or intolerant to at least one AAD and have failed one or more attempts at catheter ablation or prefer a surgical approach.

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WHAT'S NEXT?

- Continuing to educate the market
- · Generate evidence
- Influence other major societies



Society Guidelines for Treatment of AF

SOCIETY	RECOMMENDATION
STS (2016) 1	Surgical ablation for AF can be performed without additional operative risk of mortality or major morbidity, and is recommended at the time of concomitant isolated aortic valve replacement, isolated coronary artery bypass graft surgery, and aortic valve replacement plus coronar artery bypass graft operations to restore sinus rhythm.
	Surgical ablation for AF can be performed without additional operative risk of mortality or major morbidity, and is recommended at the time of concomitant mitral operations to restore sinus rhythm.
AHA/ACC/HRS (2014) ²	An AF surgical ablation procedure is reasonable for selected patients with AF undergoing cardiac surgery for other indications.
	A stand-alone AF surgical ablation procedure may be reasonable for selected patients with highly symptomatic AF not well managed with other approaches.
HRS/ACC/AHA/STS/EH RA/ECAS (2012) ³	"It is advisable that all patients with documented AF referred for other cardiac surgeries undergo a left or biatrial procedure for AF at an experienced center, unless it will add significant RISK"
ISMICS (2009) ⁴	*Concomitant surgical ablation is recommended to increase the incidence of sinus rhythm both at short- and long-term follow-up to improve ejection fraction and exercise tolerance to reduce the risk of stroke and thromboembolic events and to improve long-term survival.*
UK NICE (2014)5	$Surgical\ ablation\ of\ AF\ should\ be\ considered\ in\ patients\ with\ persistent\ AF, or\ with\ symptomatic\ AF\ undergoing\ cardiothoracic\ surgery.$
ESC (2010) ⁶	Surgical ablation of AF should be considered in patients with symptomatic or asymptomatic AF undergoing cardiac surgery.
	Minimally invasive surgical ablation of AF without concomitant cardiac surgery is feasible and may be performed in patients with symptomatic AF after failure of catheter ablation



Society Guidelines for LAAM

SOCIETY	RECOMMENDATION
STS (2016) 1	It is reasonable to perform left atrial appendage excision or exclusion in conjunction with surgical ablation for AF for longitudinal thromboembolic morbidity prevention.
AHA/ACC/HRS (2014) ²	$Surgical\ excision\ of\ the\ left\ atrial\ appendage\ may\ be\ considered\ in\ patients\ undergoing\ cardiac\ surgery.$
UK NICE (2014) ⁵	Consider LAA occlusion if anticoagulation is contraindicated or not tolerated and discuss the benefits and risks of LAAO with patient.
EJCTS (2013) ⁴	We conclude that there has been no proven benefit of surgical LAA exclusion in terms of stroke reduction or mortality benefit If exclusion is contemplated, devices designed for appendage exclusion should be used rather than a cut-and-sew or stapling technique.
EHRA/EAPCI ^{S,6}	OAC (with VKA or NOACs) is the standard therapy, however, for patients who are contraindicated or refuse (N) OACs the main indication for LAA occlusion is a relative or absolute contraindication to (N)OACs in patients with AF and a CHADS2 score of ≥1 or CHA2 -DS2 -VASc score ≥2

^{1.} Badhwar et al.; Society of Thoracic Surgeons 2017. Clinical Practice Guidelines for the Surgical Treatment of Atrial Fibrillation, Ann Thorac Surg 2017;103:329-4:

January et al.; AHA/ACC/HRS Atrial Fibrillation Guideline. JACC Vol. 64, no. 21. December 2, 2014.
 Aintigent Institute for Mediatric Part Expellence. Atrial fibrillation, macropromet. Alleland authorities.



⁴ Dunning et al., Guideline for the surgical treatment of atrial fibriliation. European Journal of Cardio-Thoracic Surgery. Vol 44. 2013

Thambo et all. The future of left strial appendage occlusions. When extraordinary claims require evidence... Archives of Carolivascular Disease 2015 vol. 108

U.S. Open Market Work-Up



U.S. LAA Closure Market Work-Up



U.S. MIS Market Work-Up



Additional Growth Drivers with AtriClip

Prophylactic treatment for OPEN LAA	Total OPEN WW Procedures	900,000
Additional \$500M global market	Total OPEN U.S. Procedures	300,000
	70% without Afib	
	~U.S. Procedures with Afib	210,000
	~U.S. LAA Prophylactic Annual Opportunity ²	\$215M
Sole Therapy LAAM Market	Treatment Resistant Afib Patients in the U.S.	333,333
Competition includes implants and EP closure	10% treated annually	**************************************
(without FDA approval) Stroke trial key to success	~Annual Market Opportunity¹	\$120M
MIS Clip with Heart Procedures	Yearly MIS Heart Procedures (Valve Replacements, MIS CABG)	333,333
Opportunity for other MIS surgeries, such as valve repair Market is currently small but fast growing	~Annual Market Opportunity¹	\$540M
Assumes annual pricing of \$3,500 for MIS Assumes annual pricing of \$1,019 for Open		
		11

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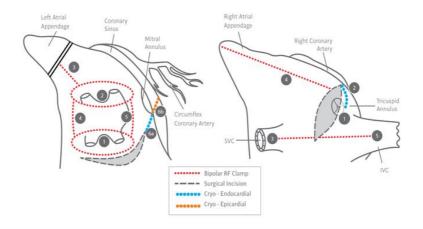


Non-Drug Options of Care For Non-Paroxysmal Afib Least Painful / Invasive THERAPY CLINICAL SUCCESS Catheter Ablation (Endocardial) Single treatment TO - 80% Off AADs Off AADs Hybrid - DEEP (BI-Lateral Totali)-Thoracoccopic) MAZE Ablation (Right-Lateral Thoracotomy) On AADs Cut-and-Sew MAZE Cut-and-Sew MAZE Solve For Non-Paroxysmal Afib ACUTE CLINICAL SUCCESS 70 - 80% Off AADs 70 - 80% Off AADs

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Maze IV Procedure



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