

MARKET ANALYSIS OF ATRIAL FIBRILLATION DEVICES

**GLOBAL INDUSTRY ANALYSIS 2015-2019 AND OPPORTUNITY ASSESSMENT
2020-2030**

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INTRODUCTION

- Atrial fibrillation is also known as AFib or AF, is a type of arrhythmia refers to a quivering or irregular rhythm of the upper two chambers of the heart, that is erratically change of normal sequence electrical impulses.
- Atrial fibrillation leads blood clot, heart failure, stroke and other heart related problems if left untreated, it will double the risk of stroke.
- The cause of atrial fibrillation is not clearly defined but in most of the people it is associated with hypertension, obesity, sleep apnea and underlying heart diseases.
- Normally in heart, the electrical impulse begins in the sinoatrial (SA node) of atrium it travels to the AV node, bundle of His, bundle branches, and purkinji fibers causing the ventricles to contract.
- During atrial fibrillation, instead to SA node directing electrical rhythm, many different impulses rapidly fire at once, causing very fast and chaotic heart rhythm, that will remain in the atrium and restrict the them to contract and/or squeeze blood effectively into the ventricles.
- There are three type of atrial fibrillation paroxysmal, persistent and long-term permanent



Diagnosis of Atrial Fibrillation

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graph TD; A[Diagnosis of Atrial Fibrillation] --> B[Medical Management]; A --> C[Device Treatment]; B --> D["• Anti-Arrhythmic<br>• Oral Anticoagulants<br>• Beta-Blockers<br>• Anti-Platelets<br>• Calcium Channel Blockers"]; C --> E["• Electrophysiological Studies<br>• Ablation<br>• Cox-Maze<br>• LAA Closure<br>• Treatment of Underlying Disease"]
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The diagram is a flowchart titled "Diagnosis of Atrial Fibrillation". It branches into two main categories: "Medical Management" and "Device Treatment". Under "Medical Management", there is a list of five treatment options: Anti-Arrhythmic, Oral Anticoagulants, Beta-Blockers, Anti-Platelets, and Calcium Channel Blockers. Under "Device Treatment", there is a list of five treatment options: Electrophysiological Studies, Ablation, Cox-Maze, LAA Closure, and Treatment of Underlying Disease. The background of the slide features a close-up of a person's hand and a green ECG line.

Medical Management

- Anti-Arrhythmic
- Oral Anticoagulants
- Beta-Blockers
- Anti-Platelets
- Calcium Channel Blockers

Device Treatment

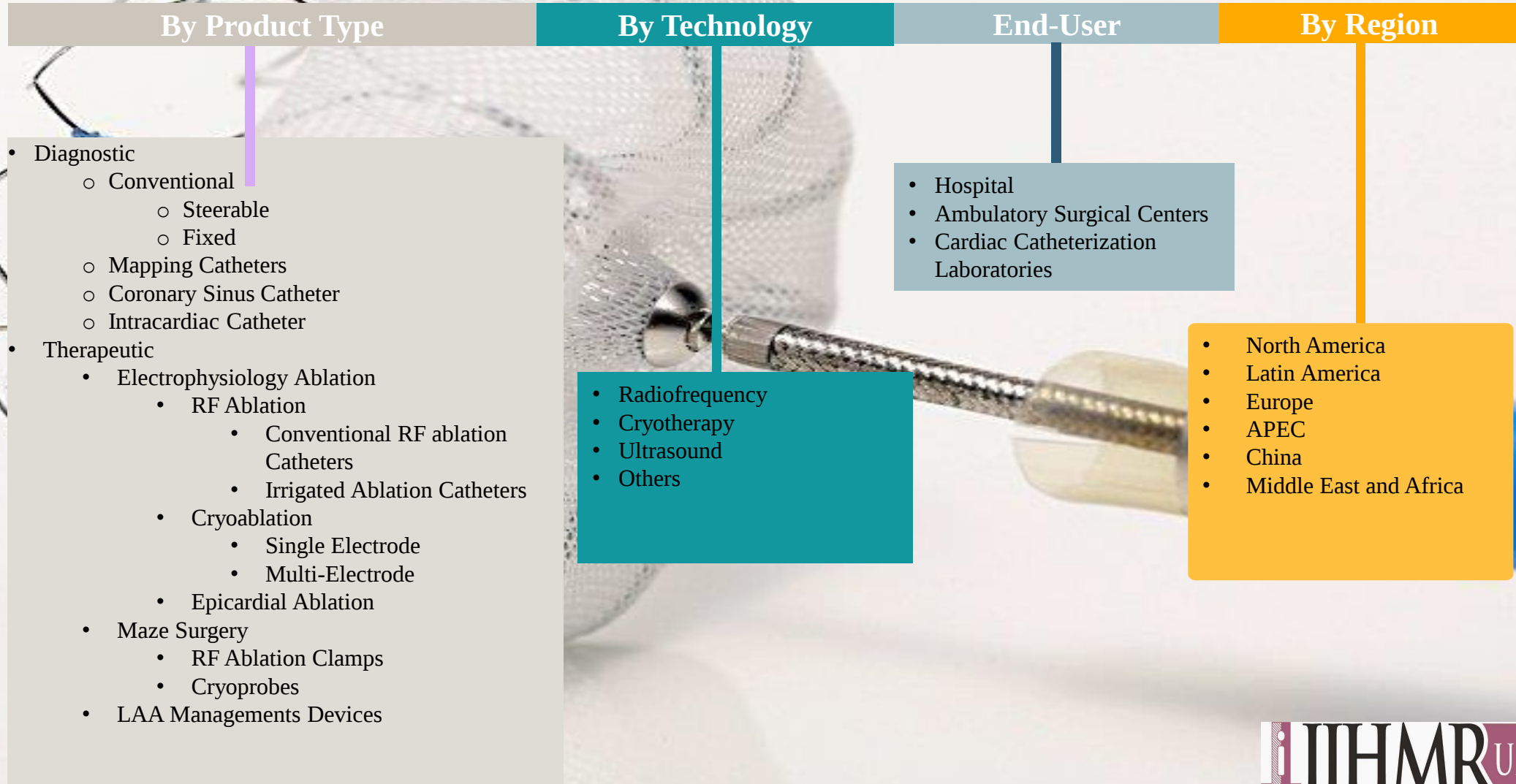
- Electrophysiological Studies
- Ablation
- Cox-Maze
- LAA Closure
- Treatment of Underlying Disease

PATIENT JOURNEY

- Atrial fibrillation patient journey starts from the onset of atrial fibrillation or any previously held underlying heart disease.
- There are three type of atrial fibrillation namely; Paroxysmal, Persistent and permanent. wherein the paroxysmal AF last for less than seven days, persistent AF last for more than seven days and permanent AF which goes only with medication
- The patient with AF is diagnosed by normal ECG and 2D echocardiography and is related to underlying heart disease such as cardiovascular disease, rheumatic heart disease (RHD), and congenital heart disease.
- Usually newly diagnose atrial fibrillation is treated with medical management anti-arrhythmic and oral anticoagulants are the first line drug for the treatment of atrial fibrillation
- Electrophysiological study and ablation procedure are done for patients with long standing and permanent AF with no specific cause.
- Left atrial appendage closure is indicated in patient with persistent AF in which the clot formation risk is more
- Cox-Maze Surgery is indicated in patients with valvular heart disease and patients going for CABG

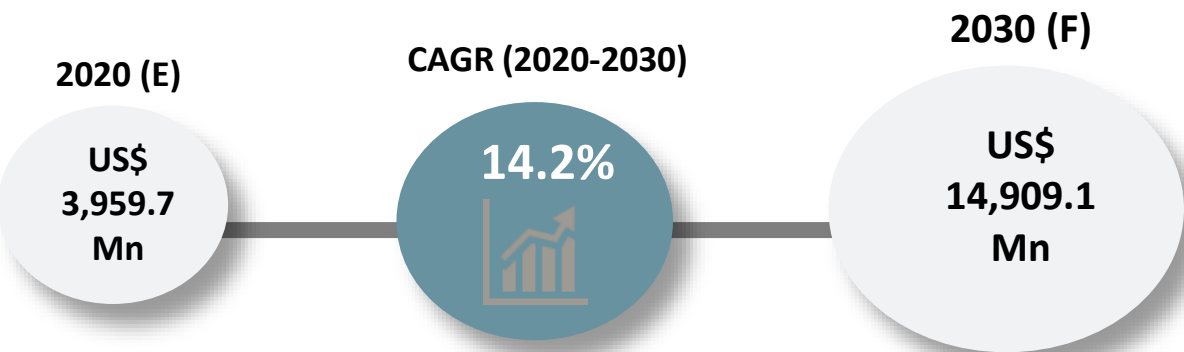
ATRIAL FIBRILLATION DEVICES MARKET:

Taxonomy



GLOBAL ATRIAL FIBRILLATION DEVICES MARKET: OUTLOOK

MARKET VALUE ANALYSIS



COMPETITIVE LANDSCAPE



MARKET DYNAMICS

Drivers

- Growing prevalence of atrial fibrillation in geriatric and adult population
- Growing demand for minimally invasive surgical treatment
- Technological advancement

Restraints

- High treatment cost
- Product recall affecting overall market adoption
- Preference towards medical management

Opportunities

- Increasing target patient pool
- High focus on development and new product launch
- Growing investment on R&D

Trends

- Demand for catheter-based AF ablation
- Increasing mergers and acquisitions by market leaders
- Collaborations and partnership by key players

GLOSSARY OF TERMS & BIBLIOGRAPHY

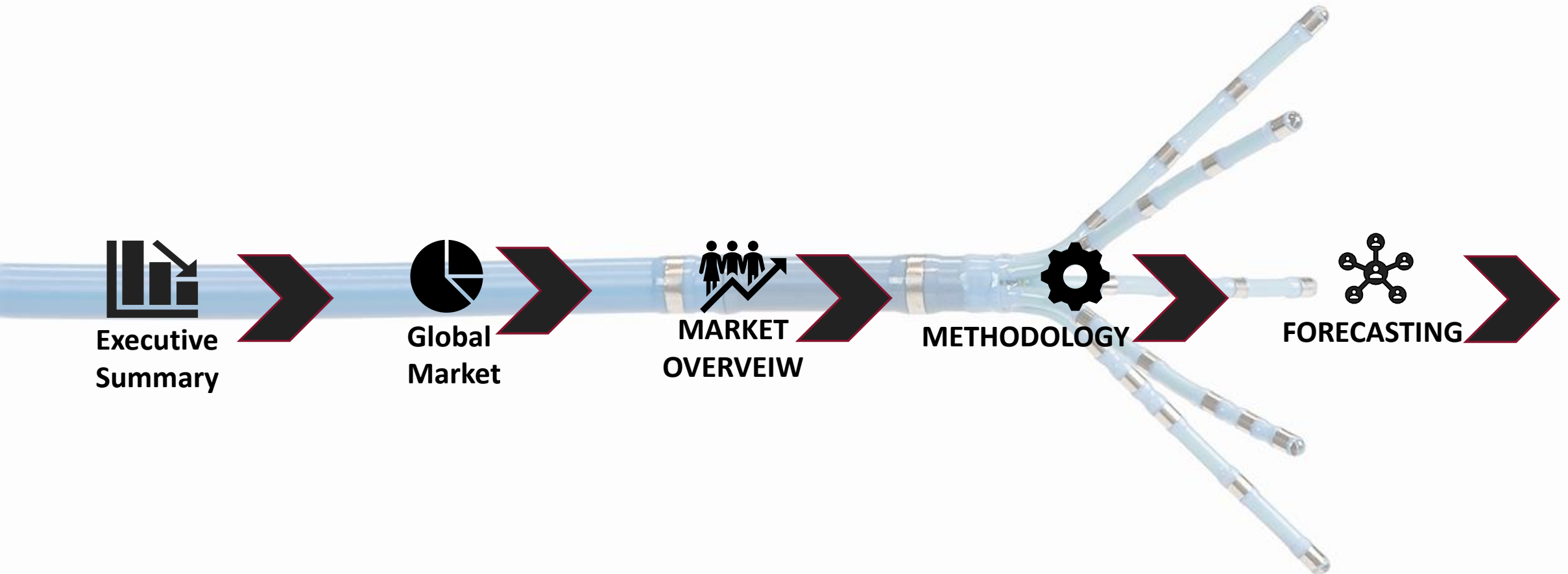
Tools used

- MS Excel

Terms

- **Forecasting** -Making predictions of the future based on past and present data and most commonly by analysis of trends.
- **Competitive landscape** -Business analysis which identifies direct or indirect competitors and at the same time.
- **CAGR** - Rate of return that would be required for an investment to grow from its beginning balance to its ending balance
- **ASP**- Average Selling Price
- **Market share**- The portion of a market controlled by a particular company or product.

AGENDA



RESEARCH QUESTION

- What is the global market size of atrial fibrillation devices?
- What are the key players of arrhythmia segments used in atrial fibrillation treatment globally (North America, Latin America, Europe, Asia Pacific, Oceania, Middle East & Africa)?



AIM

The aim of the study is to understand the atrial fibrillation device market specific to research by analyzing its key players and competitors

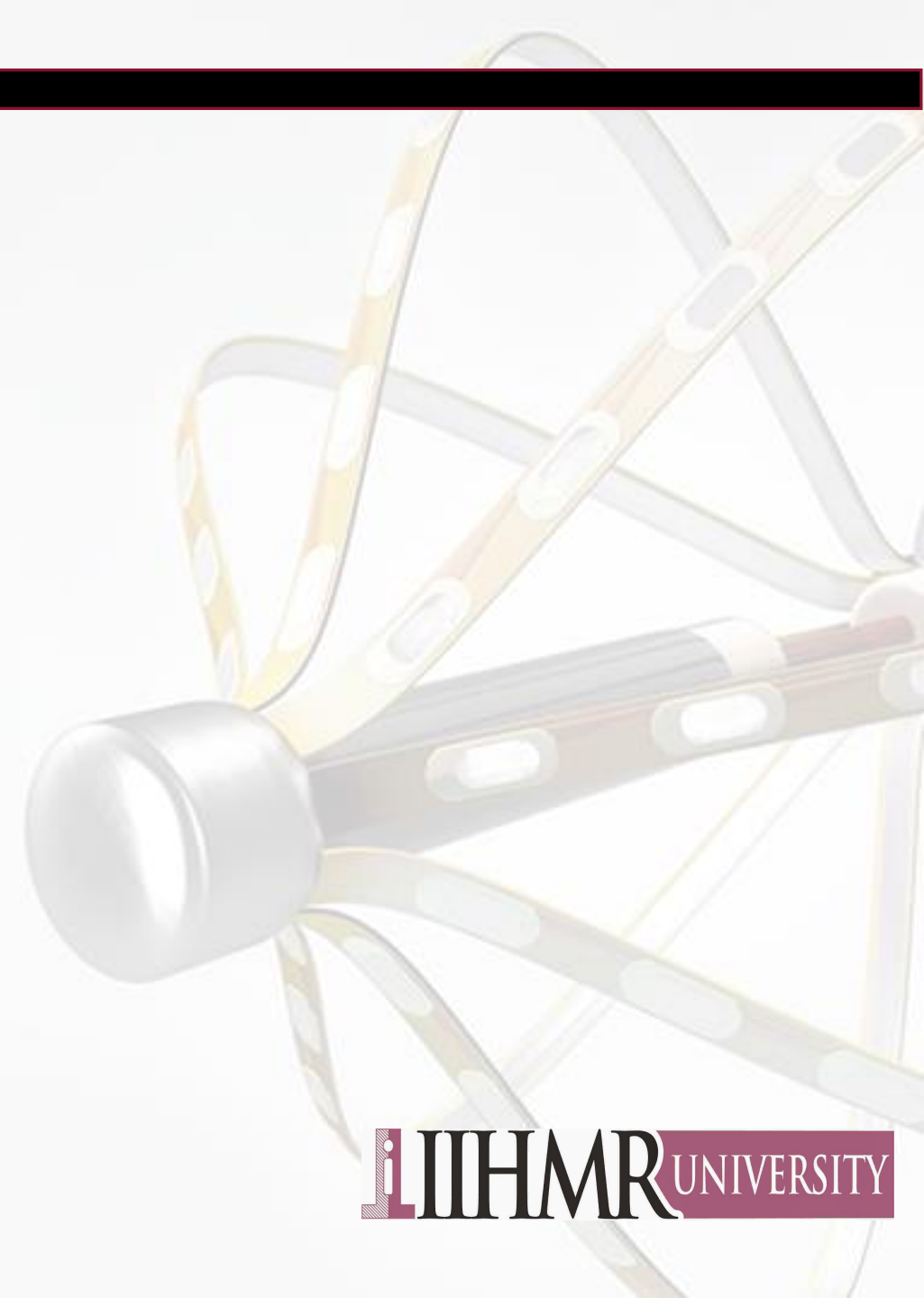
OBJECTIVES



- To Analyse and estimate the global atrial fibrillation devices
- To find out the drivers, restraints, opportunities and trends for atrial fibrillation devices market
- To understand the competitive landscape associated with atrial fibrillation devices market by company share analysis

METHODOLOGY

- Type of Research: Market Research
- **MATERIAL AND TOOLS:**
- Data type: Primary + Secondary Data
- Research Design: Descriptive
- **Data collection tool:**
- Primary data acquired from telephonic interviews, LinkedIn
- Data analysis tool:
 - MS EXCEL
- Sample Audience:
 - Electrophysiologist and Cardiologist



Inclusion criteria:

- Report includes market analysis of atrial fibrillation devices and technology used in the treatment of atrial fibrillation namely, electrophysiology, RF ablation, cryoablation, laser-based ablation, maze surgical devices and LAA management devices
- The revenue generated by the manufacturers from atrial fibrillation devices is considered during the course of our study
- revenue generated by global as well as local players in atrial fibrillation devices market is also analysed while estimating the market size
- combination use of multiple catheters for instance, RA/RV catheter either fixed or steerable is considered 2 per patients during market estimation

Exclusion criteria:

- Patients with rheumatic heart disease (RHD) is not considered in the study
- The electrophysiologist service cost for EP studies, RFA, cryoablation and other procedure is not considered while estimating the market size
- Also, the consultation fees charged by the cardiologist for the diagnosis and treatment of atrial fibrillation is not taken into consideration while deriving the market revenue

DATA COLLECTION

Sample Size: 80 electrophysiologist and industry experts globally contacted via telephone and LinkedIn

Sampling Technique: Purposive Sampling

Primary Data:

- Out of 150 electrophysiologist and cardiologist approached through LinkedIn at the global level who were having the therapy knowledge about electrophysiology and ablation for atrial fibrillation devices market, 55 replied to the questionnaire which was sent to them.
- Along with it, 25 in-depth Telephonic interviews of electrophysiologist (The key opinion Leaders) from these countries were conducted through a guided questionnaire for which they were also paid honorarium from the organization.
- The demand side participants or KOLs who typically take part in the interviews include specialists, etc. Supply side participants include industry experts such as CEOs, vice presidents (VPs), marketing/product managers, market intelligence managers, and national sales managers

Secondary Data:

- Extensive secondary research has carried out to understand the adoption and usage pattern of AF catheter in different indication. Sources of data includes information sourced from public databases, industry journals, company websites, annual reports, SEC filings, press releases, investor presentations, association blogs, data sources such as imports and exports.
- The information about the major mergers, acquisitions, clinical trials, new product launches which we will have an impact on the market obtained from the secondary research stage builds the foundation for the primary research.
- Some of the key data points which has covered include market size, requirement and demand for atrial fibrillation catheter, key trends, opportunity, drivers, and restraints and to analyze key players and their market shares. Key companies are segmented at tier level based on their revenues, product portfolio and presence.

DEVELOPING BASE YEAR DATA:

- The base year data was developed in alignment with a robust hypothesis/ model, which takes into consideration the following steps:
- Bottom-up approach is followed for evaluating the market size. Various data points are considered while evaluating the market size for each country.
- The model is built based on the prevalence of atrial fibrillation disease, followed by their adoption in each indication.
- Weighted average selling prices (ASPs) will be calculated country wise. These ASPs have been multiplied with the volume to calculate the overall market value

DEVELOPING FORECAST:

- Quantitative and qualitative assessment of basic factors driving demand, economic factors/cycles and growth rates and strategies utilized by key players in the market is analysed in detail while forecasting, in order to project Year-on-Year growth rates.
- These Y-o-Y growth projections are checked and aligned as per industry/product lifecycle and further utilized to develop market numbers at a holistic level.

STEP CONSIDERED FOR MARKET ESTIMATION

- The incidence and prevalence model is used to build the market numbers based on that forecasting is done
- Country wise prevalence is taken to calculate the treatment and adoption rate
- With this data treatment seeking population is validated from key opinion leaders and market experts
- The Number of patients were segregated by people adopting medical management and surgical management
- Adoption of different types of devices is taken in percentage to calculate the overall market opportunity
- Pricing analysis is done to understand the current market opportunity or size
- Volume is calculated from adoption of devices in percentage and total number of patients going for therapeutic treatment

Historical and base year market for region and country is calculated to derive the market size for 2018 and 2019 forecasting is done based on year-on-year growth till 2030.

DEFINITIONS

Atrial Fibrillation

Atrial fibrillation is a condition derived by irregular and very fast heart beat due to rapid fire of electrical impulses from the atria of the heart. These impulses cause the atria to quiver or twitch, which is known as fibrillation. atrial fibrillation restricts the blood flow to travel from atria to ventricle that leads to clot which will further increase the risk of stroke and heart failure

Electrophysiology

Electrophysiology study or EP studies is a minimally invasive procedure performed in a EP lab to locate or map the site of arrhythmia with the help of specialized EP equipment's and catheters that's need to be inserted from the femoral vein to various chambers of the heart.

Cardiac Ablation

Cardiac ablation is the procedure used to treat the abnormal or irregular heart rhythm that cause atria to fibrillate rapidly. ablation works by scarring the tissue that is responsible to trigger the arrhythmia

Maze Surgery

Maze surgery is a minimally invasive procedure performed by collective effort of both cardiac surgeon and electrophysiologists to treat arrhythmia called atrial fibrillation. Maze surgery cures AF by creating a “maze” of electrical pathways to let electrical impulse travel easily through the heart

MARKET BACKGROUND

Global Atrial Fibrillation Devices Market: Macroeconomic Factors

- Rapid Industrialization has bolstered the demand for atrial fibrillation devices
- Shift Towards Value-Based Healthcare Model
- Emerging Countries to Increase Investment in Healthcare Sector

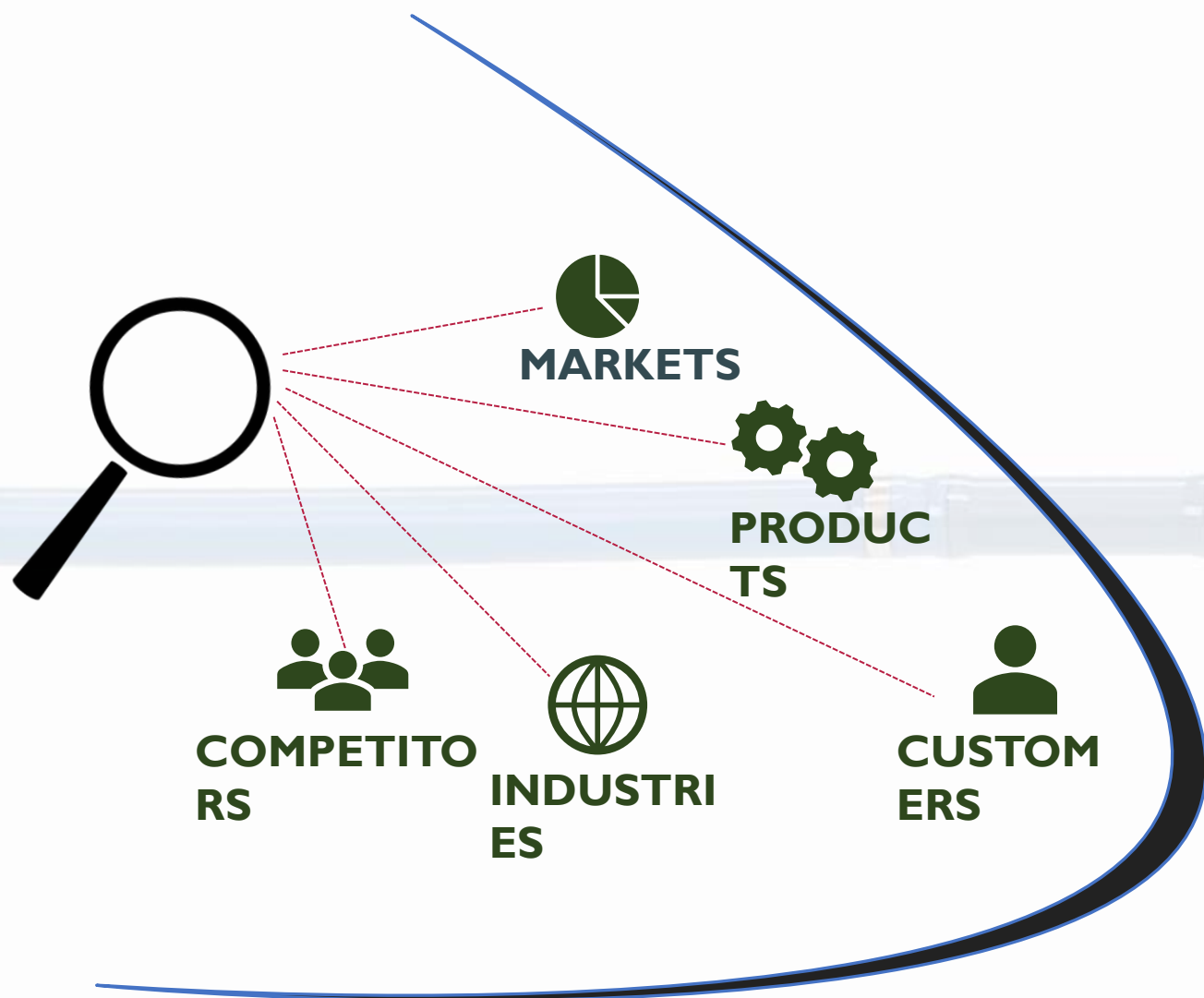
Global Atrial Fibrillation Devices Market: Demand-Side Drivers

- Growing Prevalence of Atrial Fibrillation
- Increasing Awareness for Cardiac Arrhythmia
- Use of Innovative Technique to Ablate the Site of Arrhythmia
- Growing Demand for Minimally Invasive Surgical Treatment

Global Atrial Fibrillation Devices Market: Challenges

- High Treatment Cost for Atrial Fibrillation
- Lack of Skilled and Experienced Professionals
- Product Recall Affecting Overall Market Adoption





MARKET

ATRIAL FIBRILLATION DEVICES MARKET

Figure 01: Global Atrial Fibrillation Devices Market Share, By Product Type (2020)

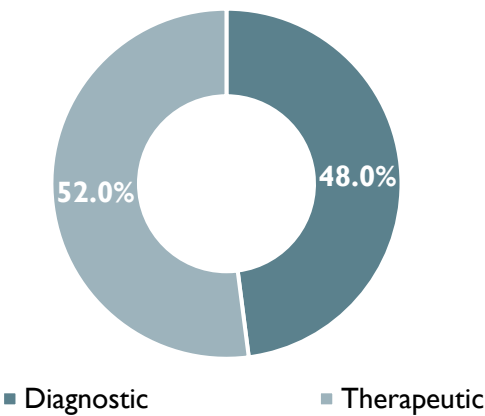


Figure 02: Global Atrial Fibrillation Devices Market Share, By Technology (2020)

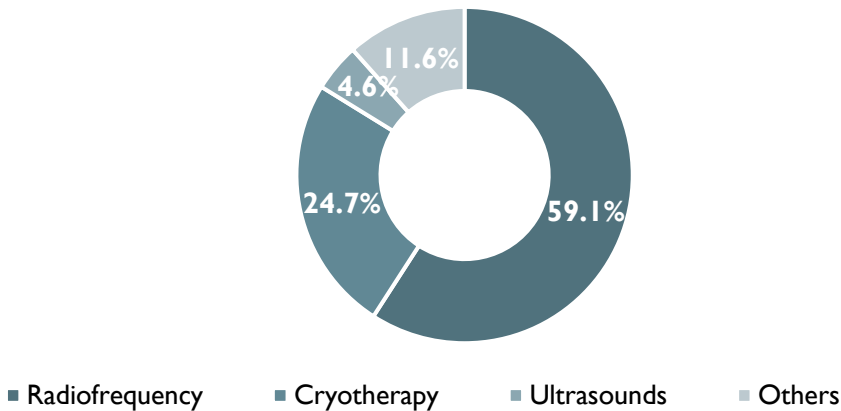


Figure 03: Global Atrial Fibrillation Devices Market Share, By End User (2020)

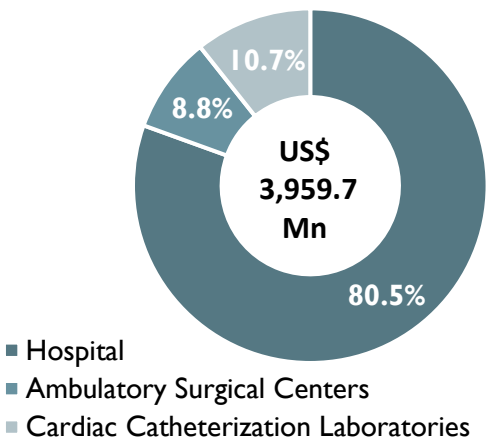
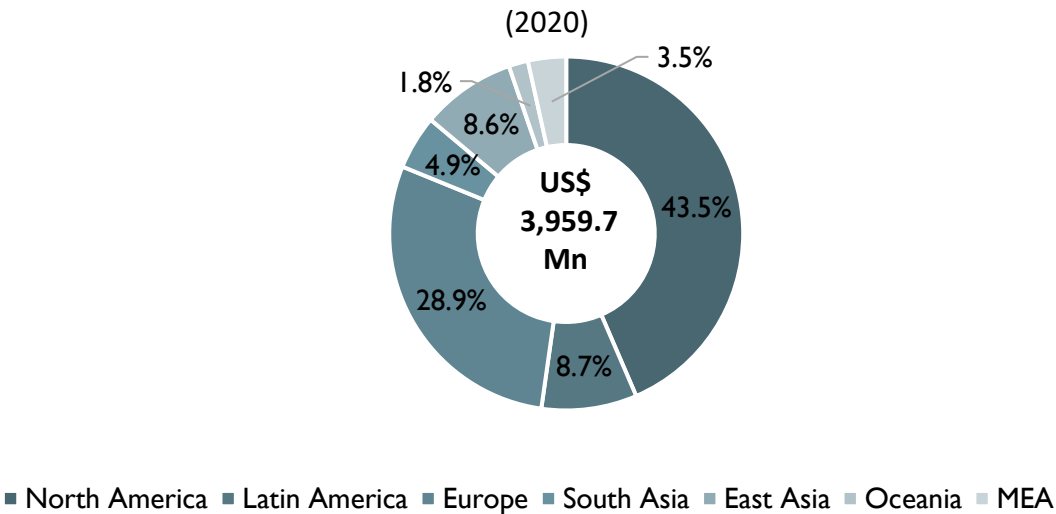
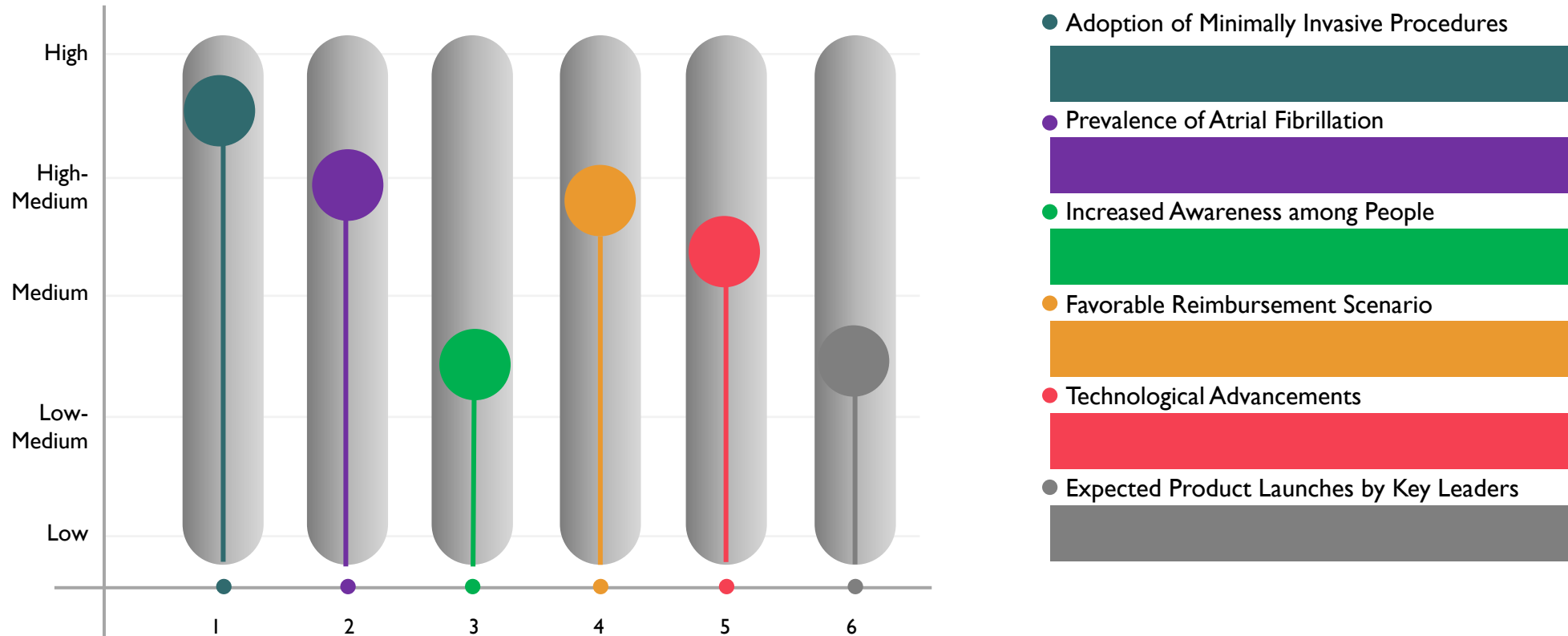


Figure 04: Global Atrial Fibrillation Devices Market Share, By Region (2020)



GLOBAL ATRIAL FIBRILLATION DEVICES MARKET: FORECAST FACTORS

FORECAST FACTORS



2019

Atrial Fibrillation Epidemiology Across the United States



In the U.S., **1-2%** of population suffers from atrial fibrillation. This number is estimated to rise by double in the year 2030

Estimated **14%** Cardiologist visits per year are related to Atrial Fibrillation.

326,625,791

Overall Population Of
United States (2017)

6,532,516

The estimated number of patients suffering
from Atrial Fibrillation in 2020

- Atrial Fibrillation most prevalent among elderly population. **Approximately 9% of people** ages 65 and older in the U.S. are affected From Atrial Fibrillation
- Moreover, **Approximately 2% of people** younger than 65 years old in the U.S. are affected From Atrial Fibrillation
- According to the data from verified sources, it is estimated that Around **6-7Mn** people in the U.S. have some type of atrial fibrillation
- Approximately **1.6Mn** people are diagnosed with atrial fibrillation

Source: Centers of Disease Control and Prevention (CDC), World Epidemiology of Atrial Fibrillation , FMI, 2020

2019

Atrial Fibrillation Epidemiology Across Europe



Prevalence of Atrial Fibrillation is highest in Europe.

This is likely to be linked to high prevalence of obesity, hypertension and underlying heart disease

746,419,440

Overall Population Of
Australia (2017)

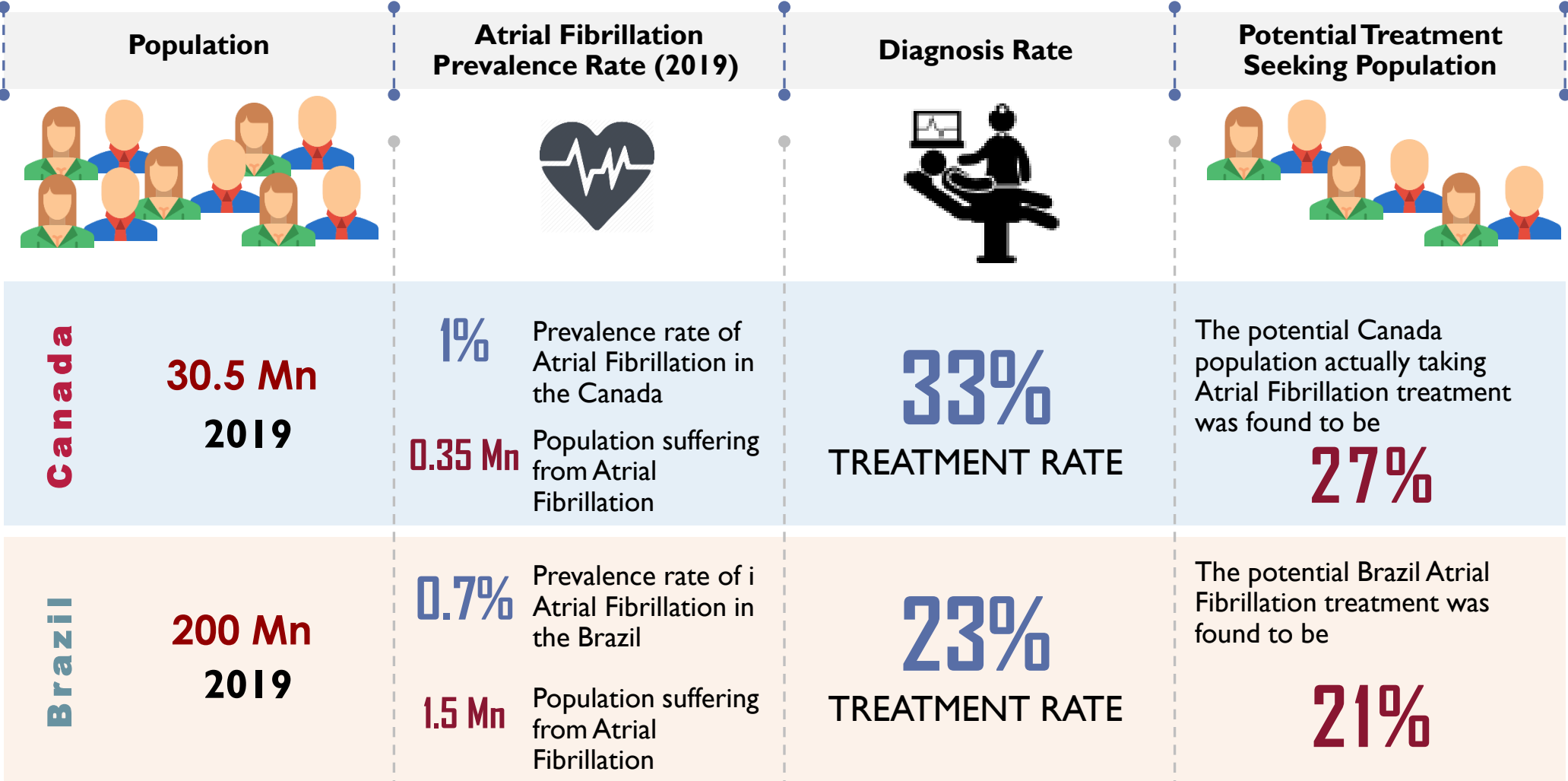
6,413,064

Over all estimate of population suffering from
Atrial fibrillation in Europe

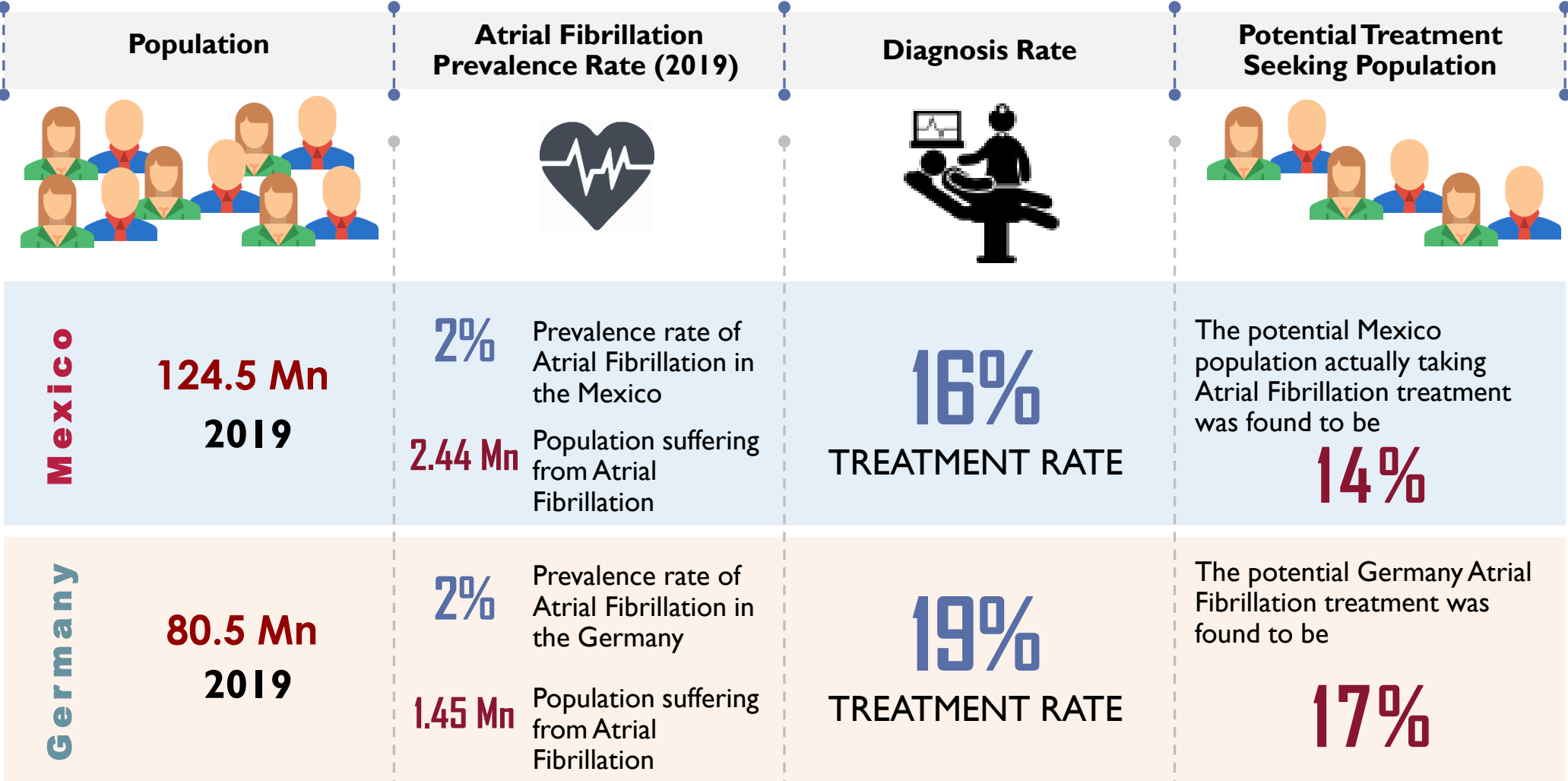
- The Over all prevalence of Atrial Fibrillation is approximately 1% in Europe. However, the prevalence of AF vary by country to country with 1.9% in United Kingdom, 2% in Germany, 1% in France, 1.6% in Italy and 2% in Spain.
- Approximately **10% people** above 65 years suffers from Atrial Fibrillation in each country
- Over **7Mn** people in Europe are suffered from atrial fibrillation
- Around **1.0Mn** people seeking treatment for atrial fibrillation

Source: Global Burden of Disease Collaborative Network, FMI, 2020

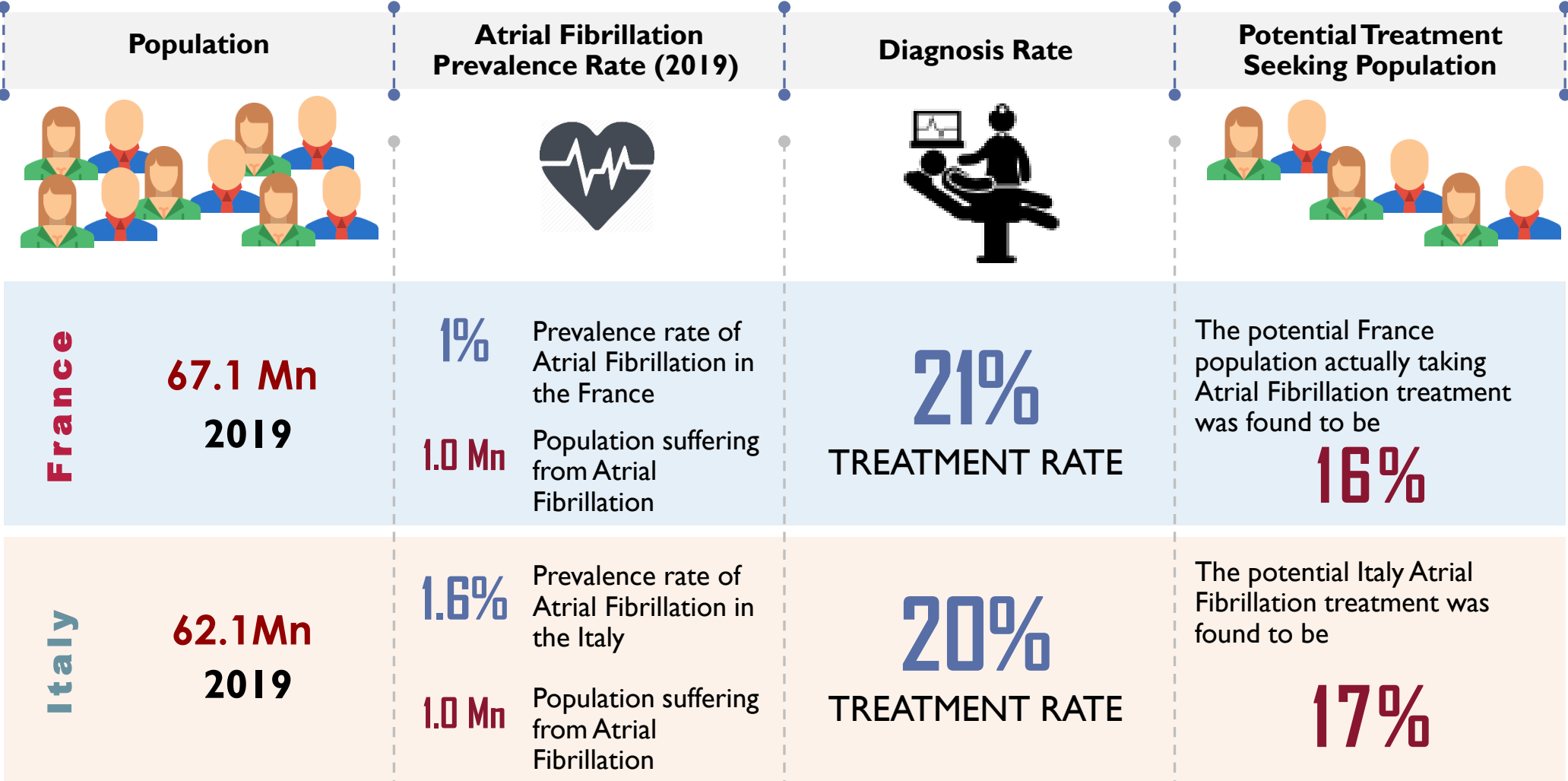
ATRIAL FIBRILLATION EPIDEMIOLOGY (3/9)



Source: Canadian Task Force on Preventive health Care, FMI, 2020

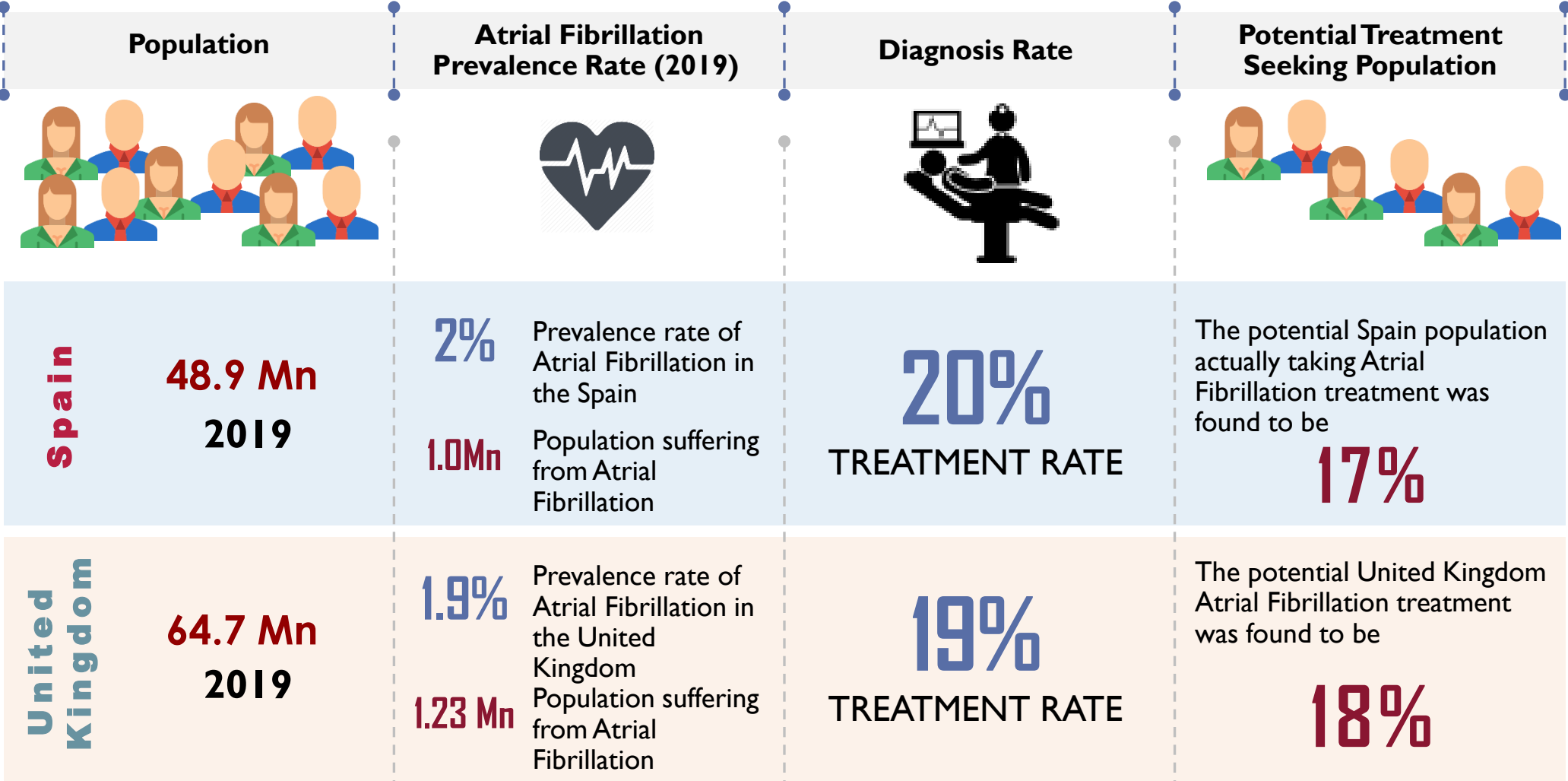


Source: Global Burden of Disease Collaborative Network, FMI, 2020



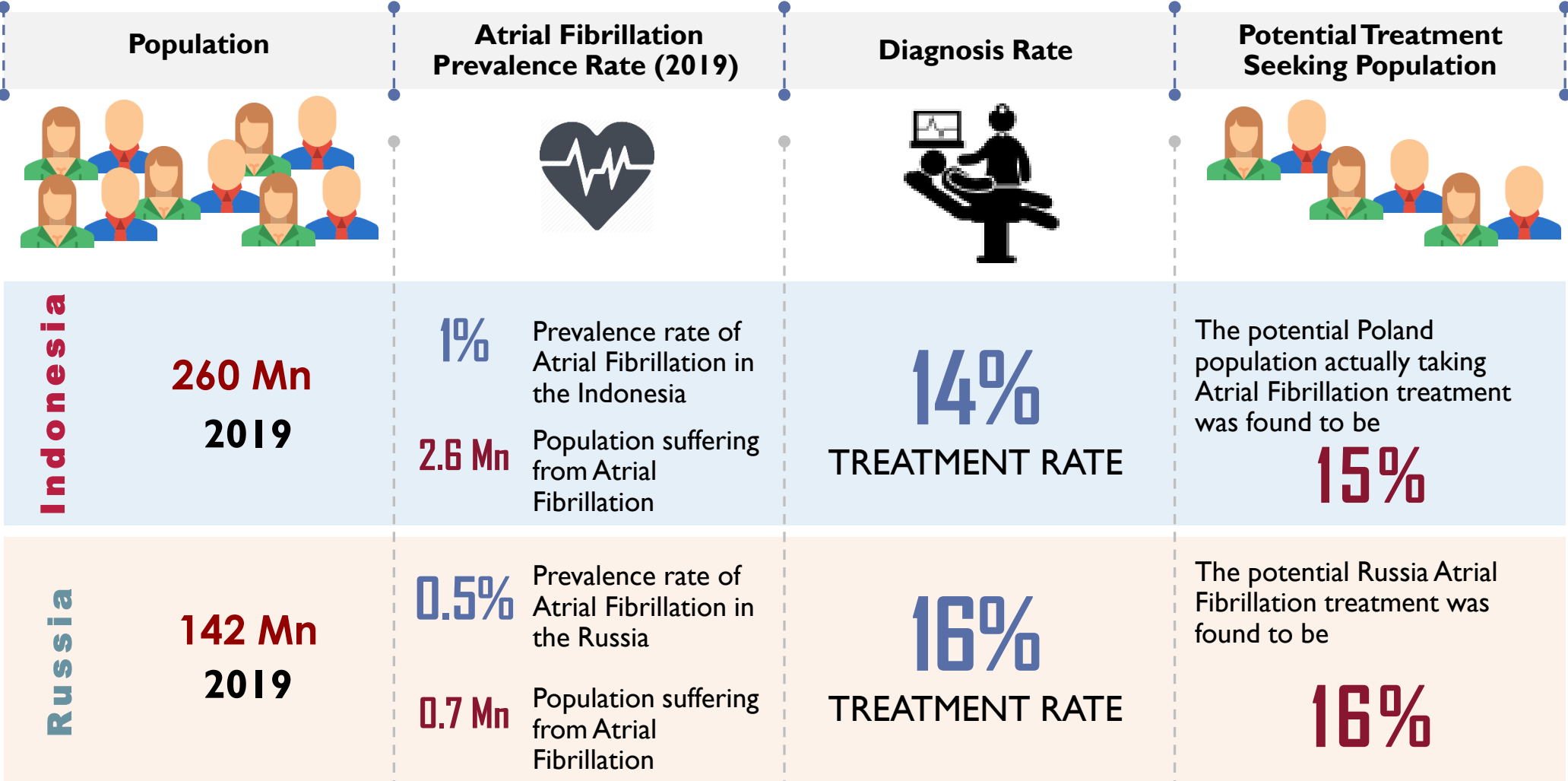
Source: Global Burden of Disease Collaborative Network, FMI, 2020

ATRIAL FIBRILLATION EPIDEMIOLOGY (6/9)

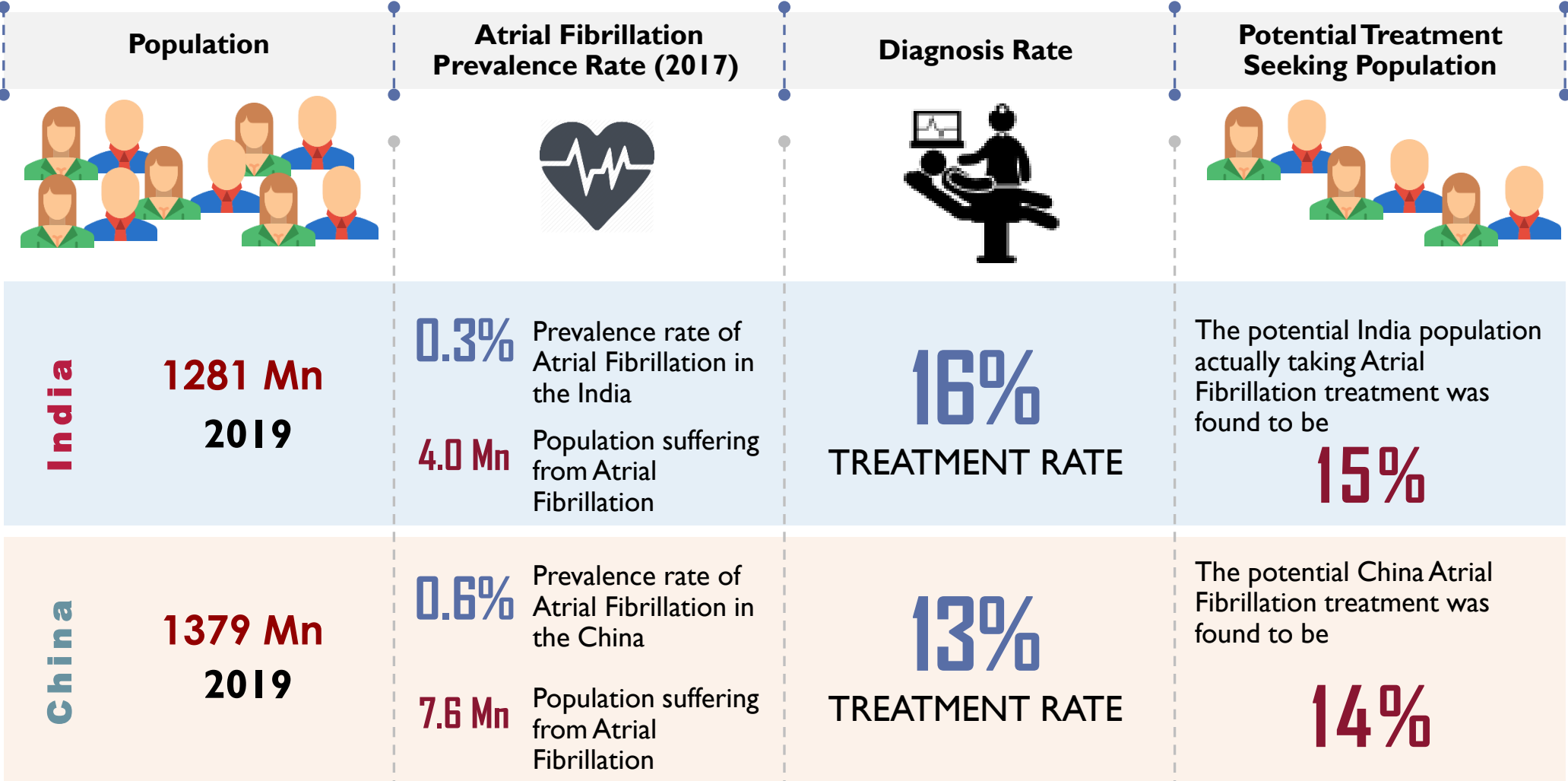


Source: Global Burden of Disease Collaborative Network, FMI, 2020

ATRIAL FIBRILLATION EPIDEMIOLOGY (7/9)

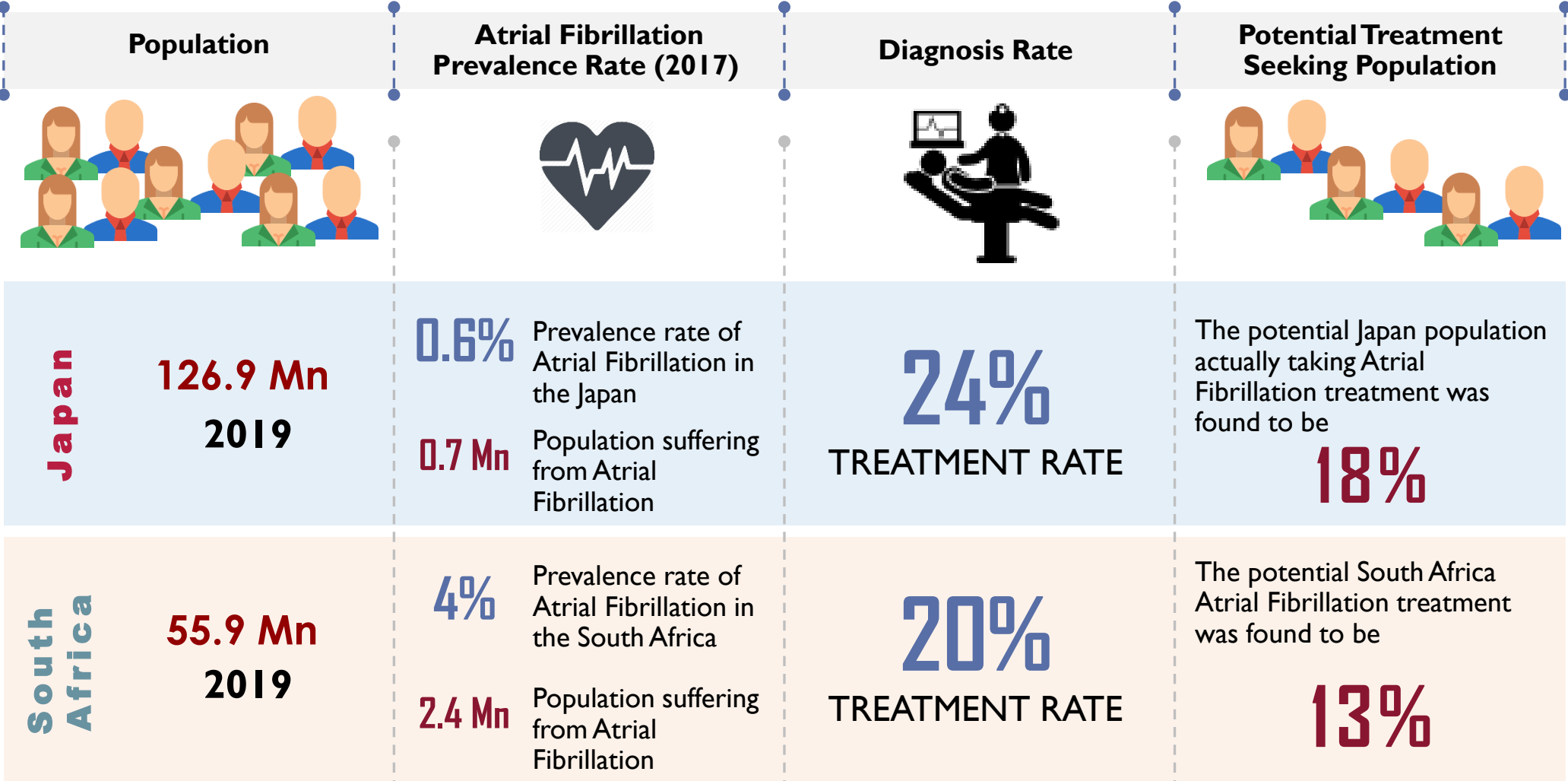


Source: Global Burden of Disease Collaborative Network, FMI, 2020

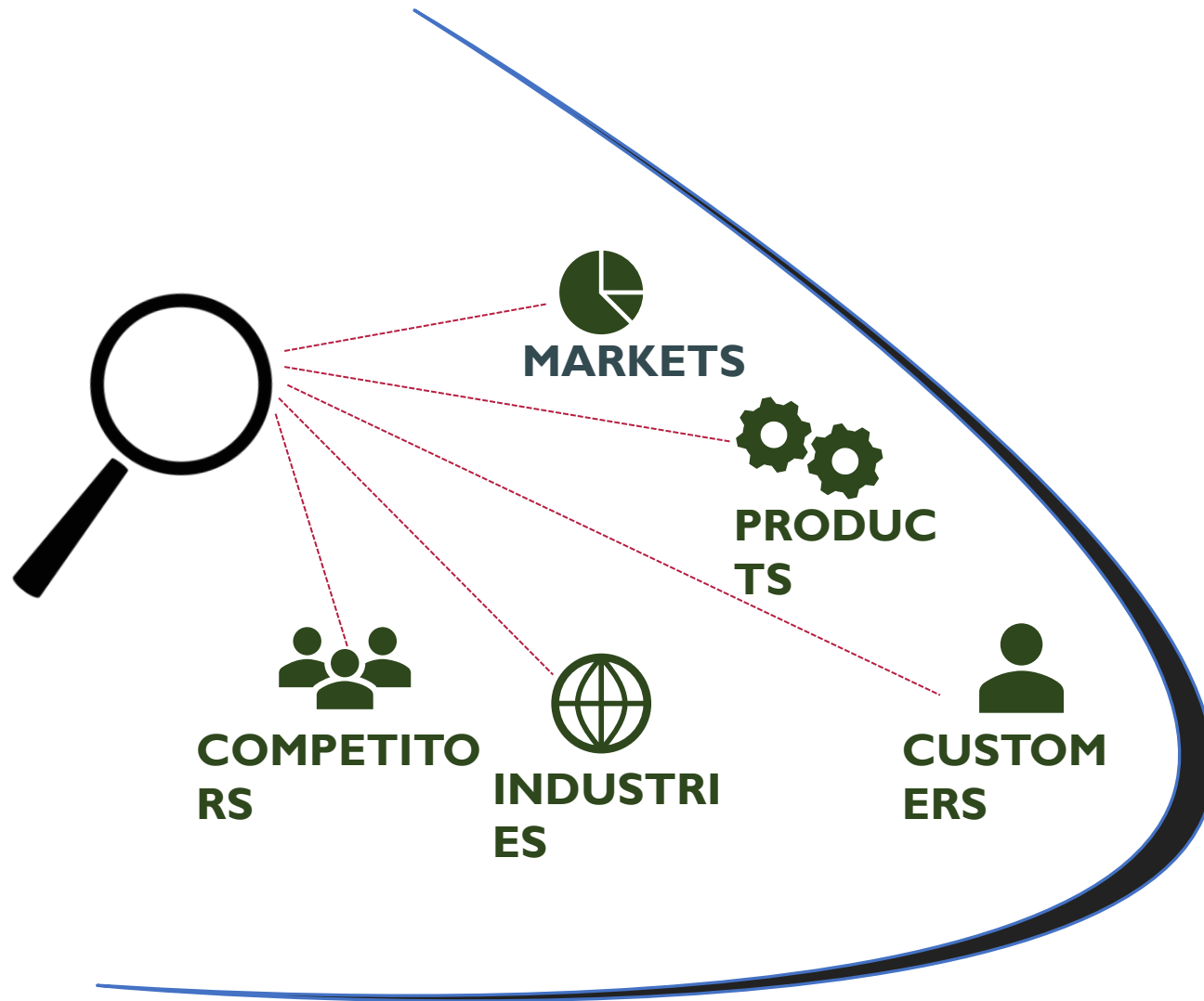


Source: Global Burden of Disease Collaborative Network, FMI, 2020

ATRIAL FIBRILLATION EPIDEMIOLOGY (9/9)

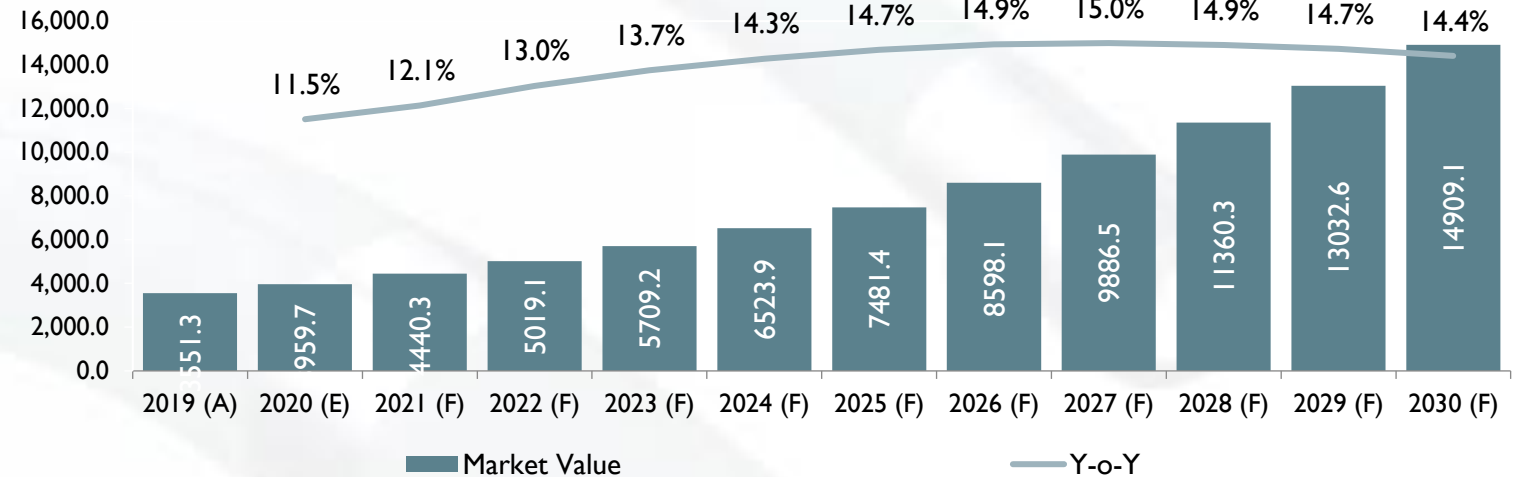
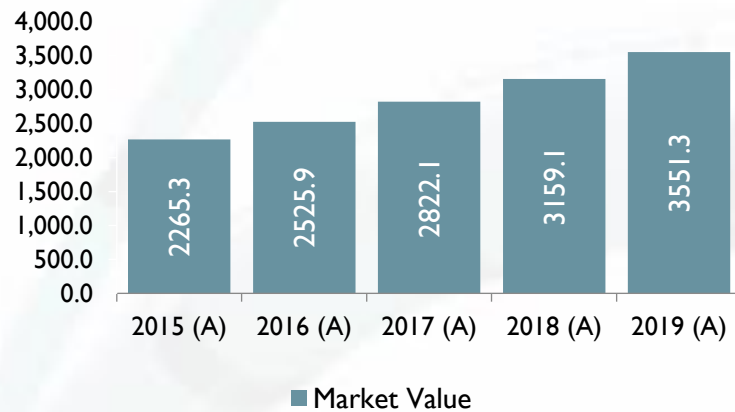


Source: Global Burden of Disease Collaborative Network, FMI, 2020



DATA ANALYSIS

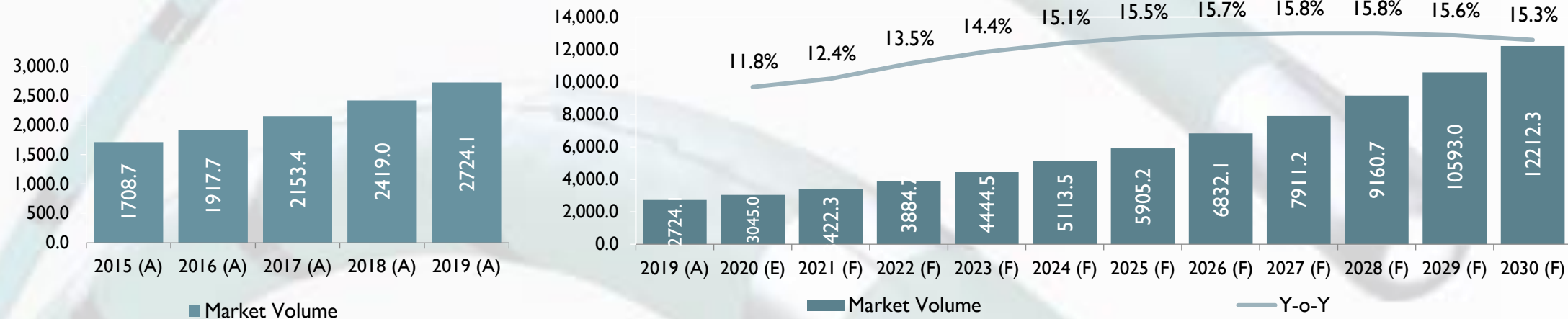
Global Atrial Fibrillation Devices Market Value Analysis 2015-2019 and forecast 2020-2030



figures highlight Global Atrial Fibrillation Devices Market revenue and Y-o-Y growth over 2020–2030

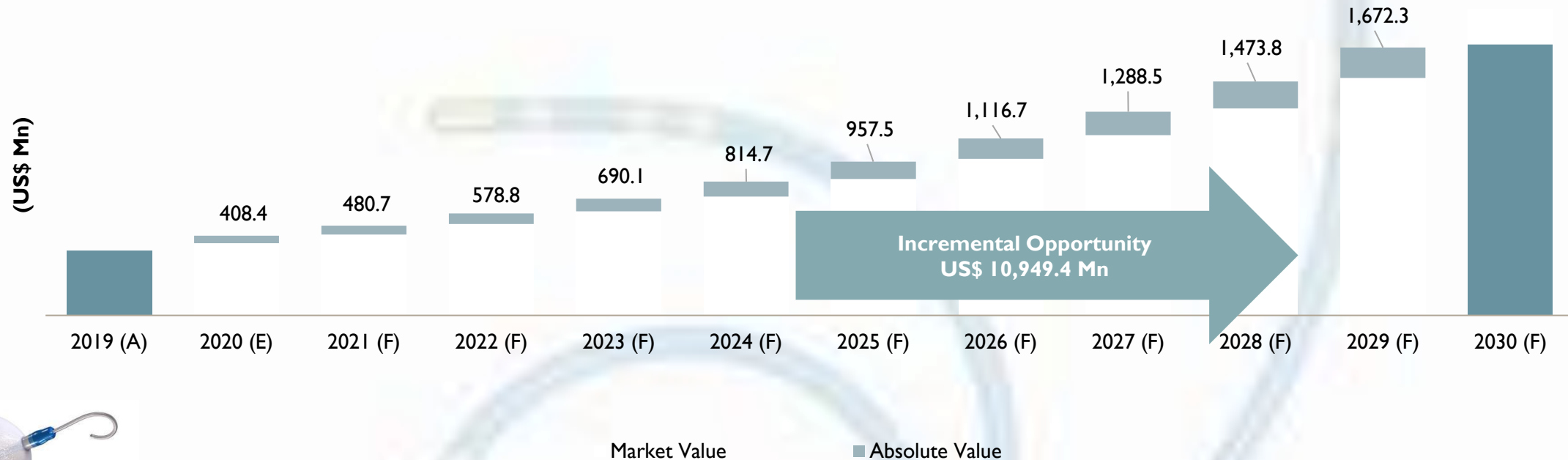
- FMI forecasts the Global Atrial Fibrillation Devices Market to grow from US\$ 3,959.7 Mn in 2020 to US\$ 14,909.1 Mn by 2030 end. This represents CAGR of 14.2% over the forecast period
- Global market for Atrial Fibrillation Devices expected represents absolute \$ opportunity of US\$ 480.7 Mn in 2020 over 2020 and incremental opportunity of US\$ 10,949.4 Mn between 2020 and 2030

Global Atrial Fibrillation Devices Market Volume Analysis (`000 Units) 2015-2019 and Forecast 2020-2023



- Figures highlight Global Atrial Fibrillation Devices Market volume and Y-o-Y growth over 2020–2030
 - FMI forecasts the Global Atrial Fibrillation Devices Market to grow from 3,045 thousands in 2020 to US\$ 12,212 thousands by 2030 end in term of volume. This represents CAGR of 14.9% over the forecast period
 - Conventional EP catheters is the leading segment which is then followed by mapping catheters in term of volume. While RF ablation catheters is expected to show significant growth over the forecast period.

Global Atrial Fibrillation Devices Market: Opportunity Assessment 2020-2030

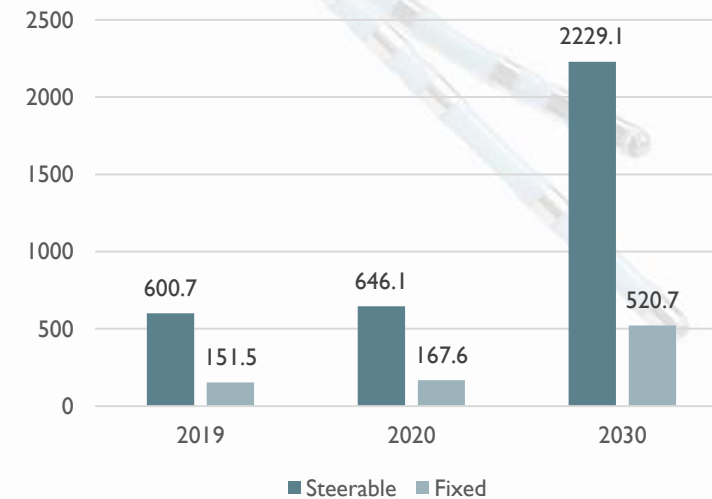
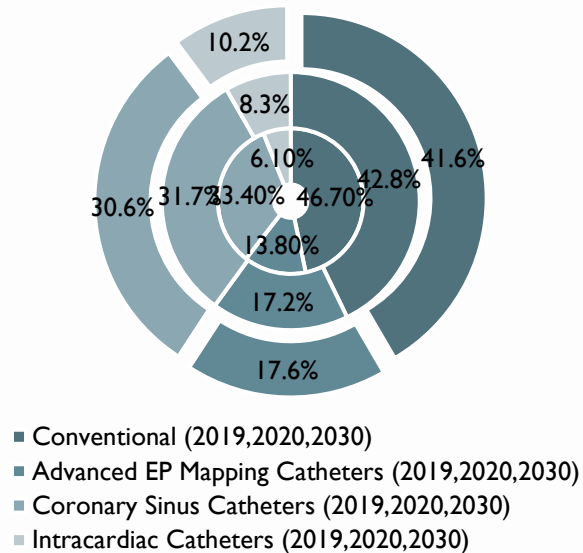
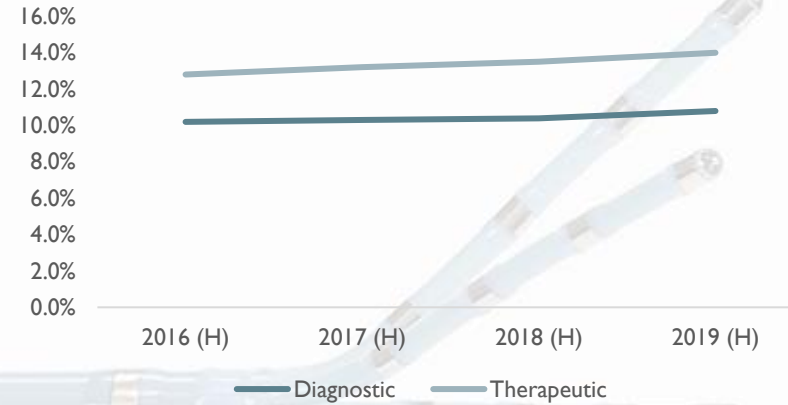
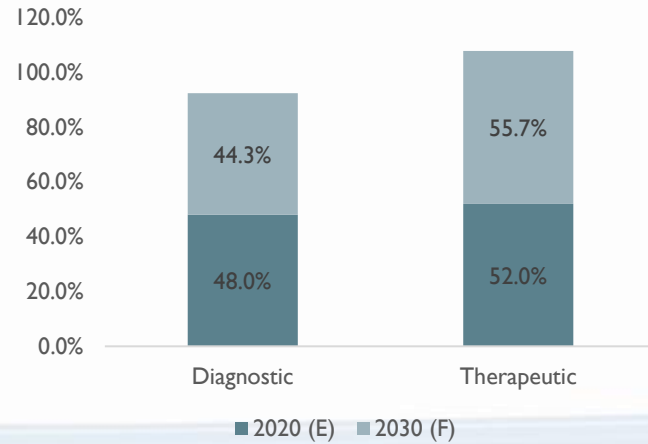


- Figures highlight global Atrial Fibrillation Devices market revenue, Y-o-Y growth, and the opportunity over assessment 2020-2030
- This is traditionally overlooked when analysts forecast the market. But, the absolute dollar opportunity is critical in assessing the level of opportunity that an enterprise can look to achieve, as well as to identify potential resources from both a sales and delivery perspective
- The global Atrial Fibrillation Devices market will represent US\$ 10,949.4 Mn total incremental opportunity in the period between 2020 and 2030. The market is forecast to grow from US\$ 3,959.7 Mn to US\$ 14,909.1 Mn with the CAGR of 14.2% in the period of 2020-2030

The background of the slide features two green medical catheters. One catheter is positioned diagonally from the top left towards the bottom right, while the other is positioned more horizontally across the middle. Both catheters have several silver-colored bands or markers spaced along their length. The catheters appear to be made of a flexible material, possibly silicone or plastic, and have a smooth, cylindrical shape.

GLOBAL ATRIAL FIBRILLATION DEVICES MARKET ANALYSIS 2015-2019 AND FORECAST 2020–2030, BY PRODUCT TYPE

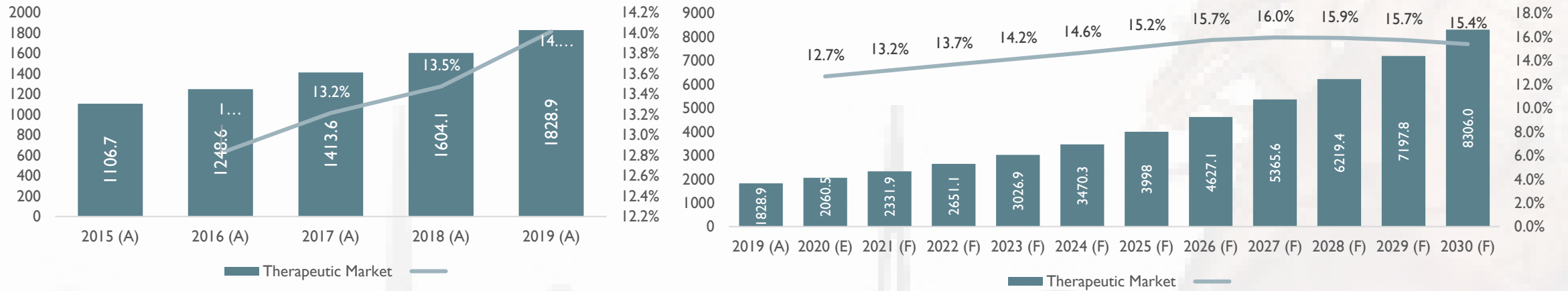
Global Atrial Fibrillation Devices Market Analysis 2015-2019 and Forecast 2020-2030, By Product type



- Conventional EP catheters segment is the most lucrative segment under diagnostic segment based on product type.
 - Under Conventional EP catheters steerable catheters are more preferred than fixed due to its steerability and ease of use as it provides pacing and recording simultaneously
- The conventional EP catheters market was valued US\$ 752.2 Mn in the year 2019 and is expected to reach US\$ 2,749.8 Mn by the end of 2030. This represents the CAGR of 13%

Intracardiac Ultrasound is the emerging market for the treatment of Atrial fibrillation and valued 137.4 Mn in the year 2019. The market for Intracardiac ultrasound is expected to reach 665.9 Mn by the end of 2030. This represents the CAGR of 15.6%.

Global Atrial Fibrillation Devices Market by Product Type: Diagnostic Segment



- The figure highlight global atrial fibrillation devices market value for diagnostic segment of product type
 - The global atrial fibrillation devices market therapeutic segment of product type grow from US\$ 2060.5 Mn in 2020 to US\$ 8306.0 Mn by 2030 end. this represents the CAGR of 15% over the forecast period.

Global Atrial Fibrillation Devices Market Value (US\$ Mn) Analysis and Forecast 2015–2030, By Product Type (1/4)

Product Type	2015 (A)	2016 (A)	2017 (A)	2018 (A)	2019 (A)	2020 (E)	2021 (F)	2022 (F)	2023 (F)	2024 (F)	2025 (F)	2026 (F)	2027 (F)	2028 (F)	2029 (F)	2030 (F)	CAGR % (2020– 2030)
Diagnostic	1,158.6	1,277.3	1,408.5	1,554.9	1,722.4	1,899.2	2,108.5	2,368.0	2,682.3	3,053.6	3,483.4	3,971.0	4,520.9	5,140.9	5,834.8	6,603.1	13.3%
Therapeutic	1,106.7	1,248.6	1,413.6	1,604.1	1,828.9	2,060.5	2,331.9	2,651.1	3,026.9	3,470.3	3,998.0	4,627.1	5,365.6	6,219.4	7,197.8	8,306.0	15.0%
Total	2,265.3	2,525.9	2,822.1	3,159.1	3,551.3	3,959.7	4,440.3	5,019.1	5,709.2	6,523.9	7,481.4	8,598.1	9,886.5	11,360.3	13,032.6	14,909.1	14.2%

Global Atrial Fibrillation Devices Market Value (US\$ Mn) Analysis and Forecast 2015–2030, By Product Type (2/4)

Product Type			2015 (A)	2016 (A)	2017 (A)	2018 (A)	2019 (A)	2020 (E)	2021 (F)	2022 (F)	2023 (F)	2024 (F)	2025 (F)	2026 (F)	2027 (F)	2028 (F)	2029 (F)	2030 (F)	CAGR % (2020–2030)
D I A G N O S T I C	Conventional EP Catheters	Steerable	426.1	468.4	511.9	555.3	600.7	646.1	700.4	769.9	858.9	969.6	1,104.8	1,266.4	1,458.3	1,681.7	1,938.5	2,229.1	13.2%
		Fixed	100.7	110.8	122.5	136.0	151.5	167.6	186.1	207.5	232.4	260.9	293.1	329.4	369.9	415.2	465.5	520.7	12.0%
	Mapping Catheters		206.8	223.2	242.7	266.0	294.6	327.3	367.9	417.8	477.7	548.1	629.0	719.0	816.2	922.3	1,038.3	1,164.5	13.5%
	Coronary Sinus Catheters		336.6	376.3	422.3	476.0	538.2	602.4	673.0	758.9	858.9	973.8	1,104.2	1,250.8	1,414.4	1,597.5	1,800.6	2,022.9	12.9%
	Intra-Cardiac Ultrasound Catheters		88.5	98.5	109.1	121.6	137.4	155.9	181.1	213.9	254.4	301.2	352.3	405.3	462.2	524.1	591.9	665.9	15.6%
	Total			1,158.6	1,277.3	1,408.5	1,554.9	1,722.4	1,899.2	2,108.5	2,368.0	2,682.3	3,053.6	3,483.4	3,971.0	4,520.9	5,140.9	5,834.8	6,603.1

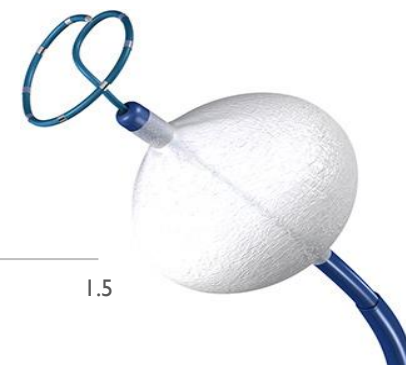
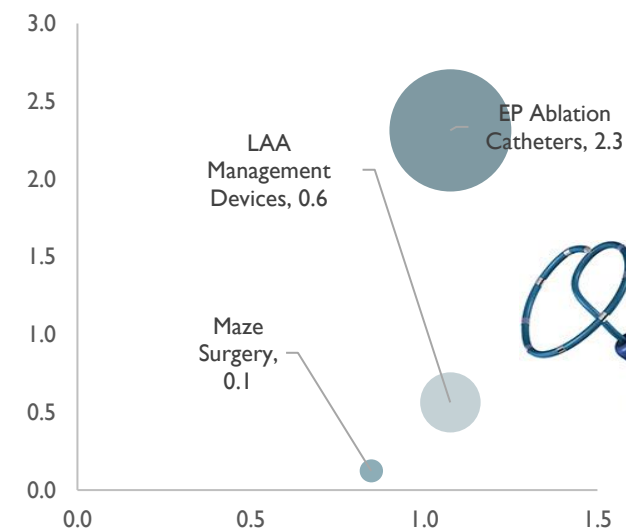
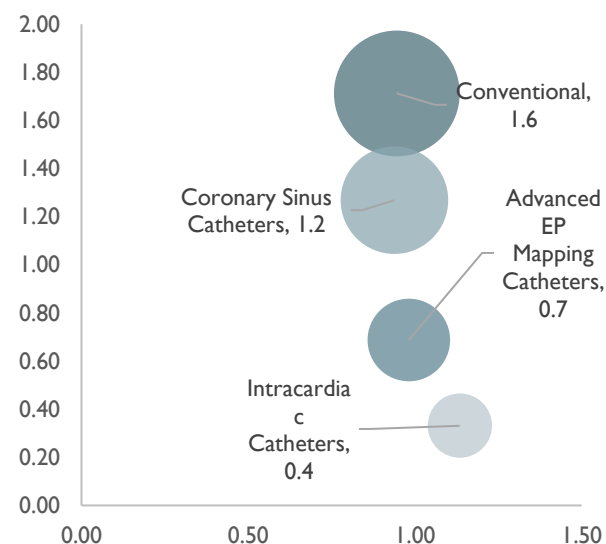
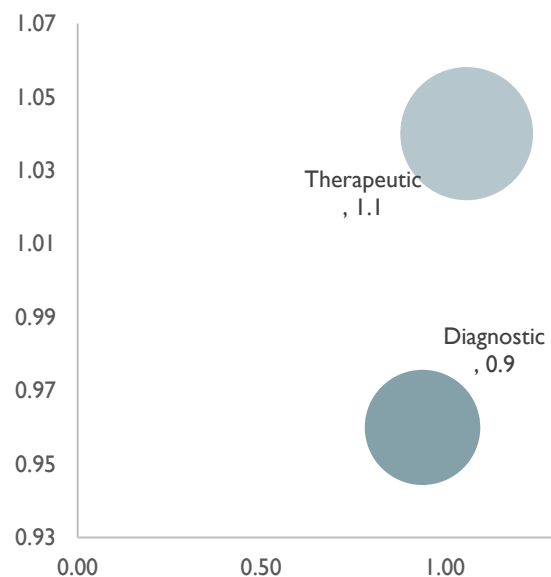
Global Atrial Fibrillation Devices Market Value (US\$ Mn) Analysis and Forecast 2015–2030, By Product Type (3/4)

Product Type				2015 (A)	2016 (A)	2017 (A)	2018 (A)	2019 (A)	2020 (E)	2021 (F)	2022 (F)	2023 (F)	2024 (F)	2025 (F)	2026 (F)	2027 (F)	2028 (F)	2029 (F)	2030 (F)	CAGR % (2020– 2030)
THERAPEUTIC	EP Ablation Catheters	RF Ablation Catheters	Conventional RF Ablation Catheters	68.5	87.5	110.0	135.5	163.4	188.6	214.7	242.7	272.6	304.7	340.7	381.4	428.6	483.7	545.8	614.2	12.5%
			Irrigated RF Ablation	220.2	244.9	273.1	304.9	341.4	379.4	423.2	474.6	534.7	606.8	693.8	799.8	928.6	1,081.7	1,260.8	1,464.5	14.5%
		Cryoablation Catheters	Single Point	71.3	83.2	97.1	113.1	130.8	147.8	166.8	188.6	214.5	245.2	279.8	318.0	359.3	404.4	454.1	508.4	13.1%
			Multi-Electrode	458.7	518.0	586.6	666.3	762.8	862.4	981.0	1,120.6	1,286.2	1,483.5	1,724.9	2,023.1	2,383.4	2,805.0	3,293.9	3,857.0	16.2%
		Epicardial catheter ablation		7.0	7.5	8.1	8.7	9.5	10.3	11.1	12.0	13.0	14.1	15.3	16.8	18.4	20.1	21.9	23.9	8.8%

Global Atrial Fibrillation Devices Market Value (US\$ Mn) Analysis and Forecast 2015–2030, By Product Type (4/4)

Product Type			2015 (A)	2016 (A)	2017 (A)	2018 (A)	2019 (A)	2020 (E)	2021 (F)	2022 (F)	2023 (F)	2024 (F)	2025 (F)	2026 (F)	2027 (F)	2028 (F)	2029 (F)	2030 (F)	CAGR % (2020– 2030)
T H E R A P E U T I C	Maze Surgery	RF Ablation Clamps	20.3	22.8	25.6	29.0	32.9	36.9	41.4	46.5	51.9	57.8	64.3	71.5	79.7	88.9	99.2	110.2	11.6%
		Cryoprobes	27.6	31.1	34.8	38.6	42.9	47.6	53.1	59.4	66.6	74.5	83.2	93.3	105.1	118.5	133.5	149.8	12.1%
	LAA Management Devices		233.1	253.6	278.3	308.1	345.1	387.4	440.6	506.8	587.5	683.7	796.0	923.1	1,062.3	1,217.0	1,388.5	1,577.9	15.1%
	Total		1,106.7	1,248.6	1,413.6	1,604.1	1,828.9	2,060.5	2,331.9	2,651.1	3,026.9	3,470.3	3,998.0	4,627.1	5,365.6	6,219.4	7,197.8	8,306.0	15.0%

Global Atrial Fibrillation Devices Market Attractiveness Analysis 2020-2030, by Product Type



Key Takeaways

- figure highlights market attractiveness analysis for global atrial fibrillation devices market by product type over 2020-2030
- Therapeutic segment dominated global atrial fibrillation devices market in terms of revenue in 2020, with attractiveness index of 1.1 over the forecast period
- Diagnostic segment is second-most lucrative segment by product type for global atrial fibrillation devices market, with attractiveness index of 0.9 during the forecast period
- Conventional EP catheters is accounted for 42.8% value share in 2020 and it is growing with CAGR of 13.0%
- Cryoablation segment is anticipated to increase at a CAGR of 15.8% over 2020-2030, to reach US\$ 4,365.4 Mn by 2030
- ICE catheter is the emerging trend for the diagnosis of atrial fibrillation and reducing the dose of radiation while performing EP studies and is anticipated to increase at a CAGR of 15.6% over the forecast period which is currently valued at US\$ 155.9 Mn in 2020

**GLOBAL ATRIAL FIBRILLATION DEVICES MARKET ANALYSIS 2015-2019
AND FORECAST 2020–2030, BY TECHNOLOGY**

Global Atrial Fibrillation Devices Market Value (US\$ Mn) Analysis and Forecast 2015–2030, By Technology

US\$ 3,959.7 Mn

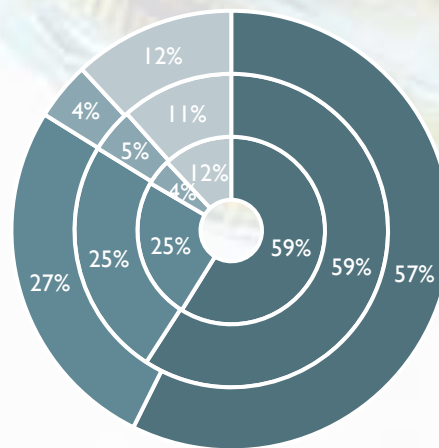
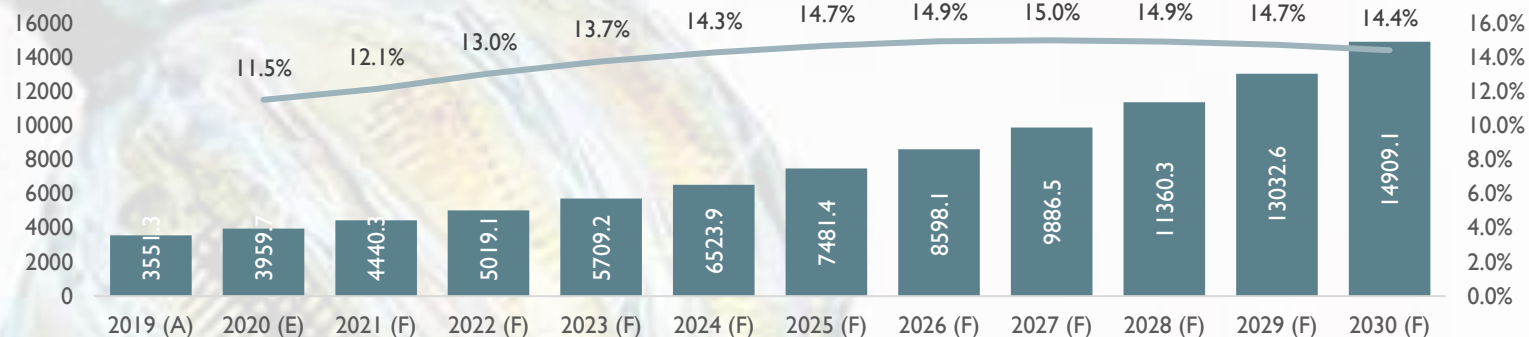


2020 (E)

US\$ 14,909.1 Mn



2029 (F)



■ Radiofrequency ■ Cryotherapy ■ Ultrasound ■ Other

Technology

18.0%

16.0%

14.0%

12.0%

10.0%

8.0%

6.0%

4.0%

2.0%

0.0%

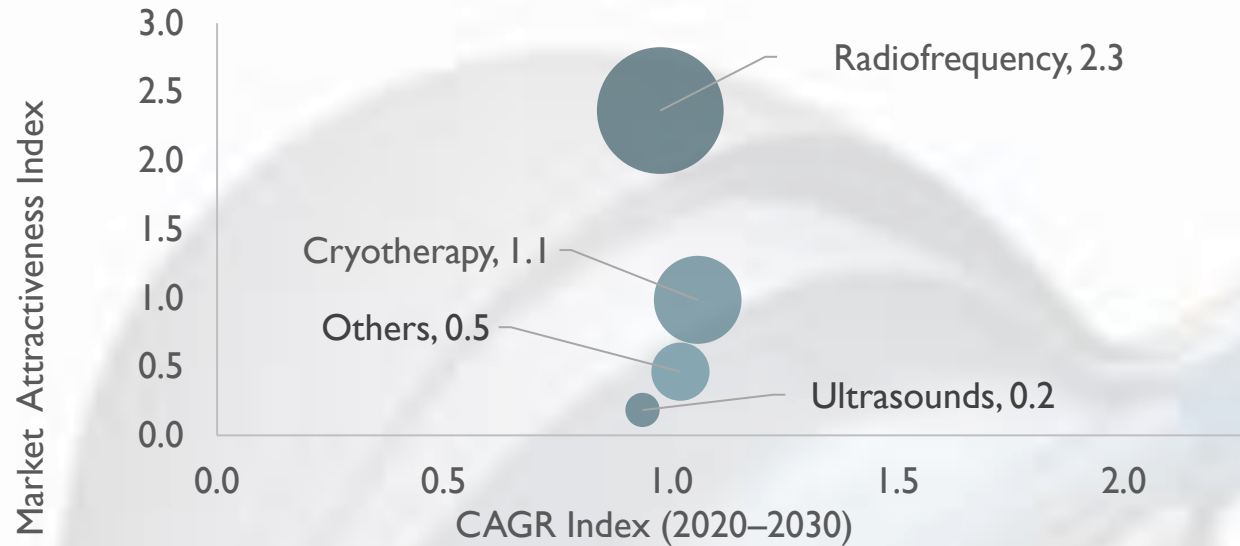
	2020 (E)	2021 (F)	2022 (F)	2023 (F)	2024 (F)	2025 (F)	2026 (F)	2027 (F)	2028 (F)	2029 (F)	2030 (F)
Radiofrequency	12.0%	2.5%	2.7%	3.0%	3.6%	4.3%	4.8%	4.9%	4.4%	4.1%	3.9%
Cryotherapy	11.9%	3.5%	4.6%	5.4%	5.4%	5.3%	5.1%	5.2%	5.3%	5.2%	5.0%
Ultrasound	12.2%	2.1%	2.5%	3.0%	3.5%	3.8%	3.7%	3.6%	3.7%	3.6%	3.3%
Others	7.9%	7.5%	11.4%	4.3%	5.7%	5.5%	5.4%	5.4%	6.8%	7.0%	5.9%

■ Radiofrequency ■ Cryotherapy ■ Ultrasound ■ Others

Global Atrial Fibrillation Devices Market Value (US\$ Mn) Analysis and Forecast 2015–2030, By Technology

Technology	2015 (A)	2016 (A)	2017 (A)	2018 (A)	2019 (A)	2020 (E)	2021 (F)	2022 (F)	2023 (F)	2024 (F)	2025 (F)	2026 (F)	2027 (F)	2028 (F)	2029 (F)	2030 (F)	CAGR % (2020– 2030)
Radiofrequency	1,320.9	1,465.8	1,640.1	1,845.2	2,089.8	2,341.1	2,632.6	2,967.6	3,353.8	3,809.1	4,353.8	5,000.1	5,746.5	6,576.0	7,506.5	8,549.9	13.8%
Cryotherapy	536.9	608.0	686.3	773.7	873.1	976.8	1,109.2	1,271.3	1,466.7	1,692.2	1,951.2	2,246.1	2,586.4	2,983.1	3,436.2	3,951.5	15.0%
Ultrasounds	94.7	109.9	126.4	144.0	162.8	182.6	204.7	230.3	260.3	295.3	336.2	382.2	434.1	493.6	560.7	635.4	13.3%
Others	312.9	342.1	369.3	396.2	425.6	459.2	493.8	549.9	628.4	727.3	840.1	969.6	1,119.4	1,307.5	1,529.3	1,772.3	14.5%
Total	2,265.3	2,525.9	2,822.1	3,159.1	3,551.3	3,959.7	4,440.3	5,019.1	5,709.2	6,523.9	7,481.4	8,598.1	9,886.5	11,360.3	13,032.6	14,909.1	14.2%

Global Atrial Fibrillation Devices Market Attractiveness Analysis 2020-2030, by Technology

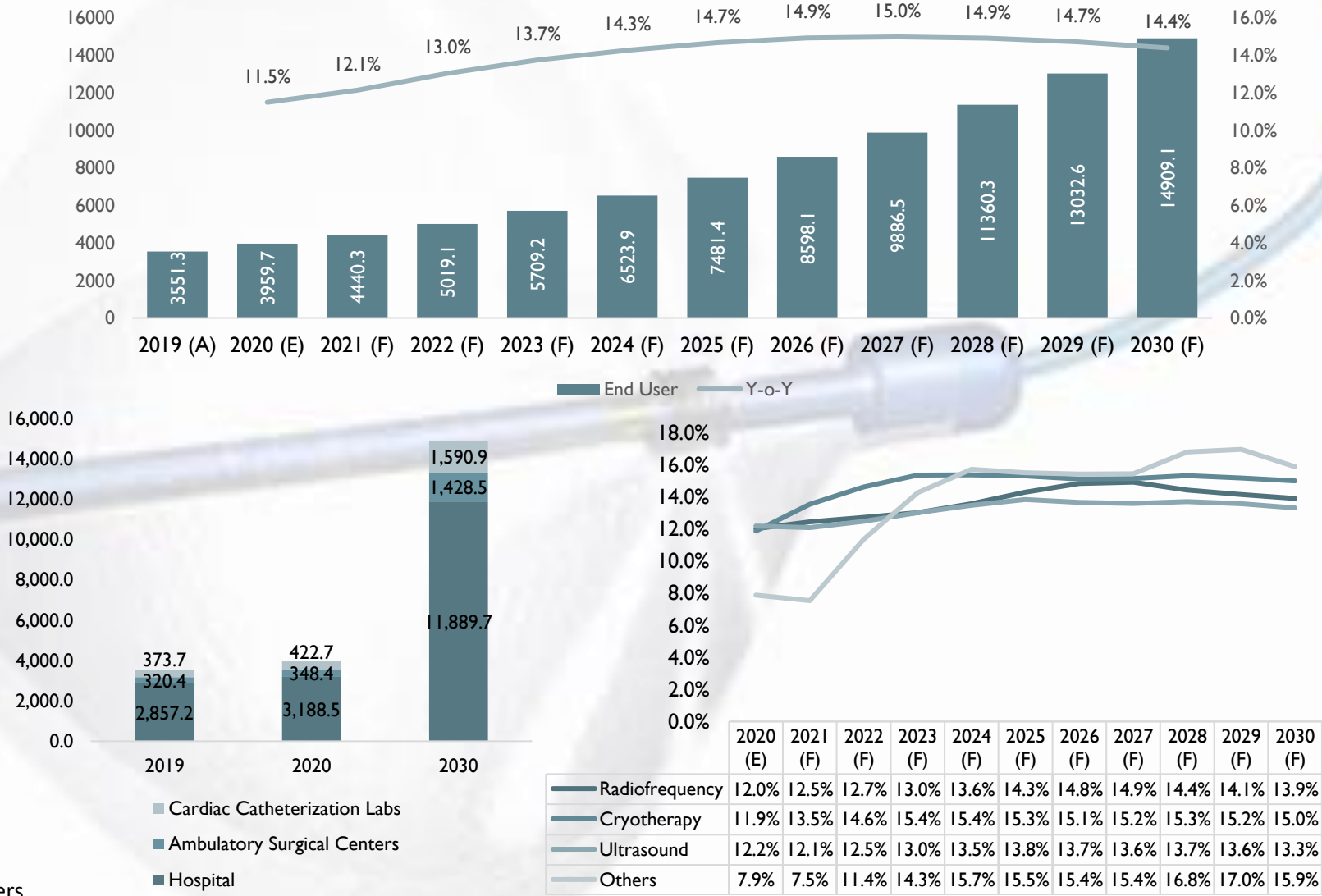
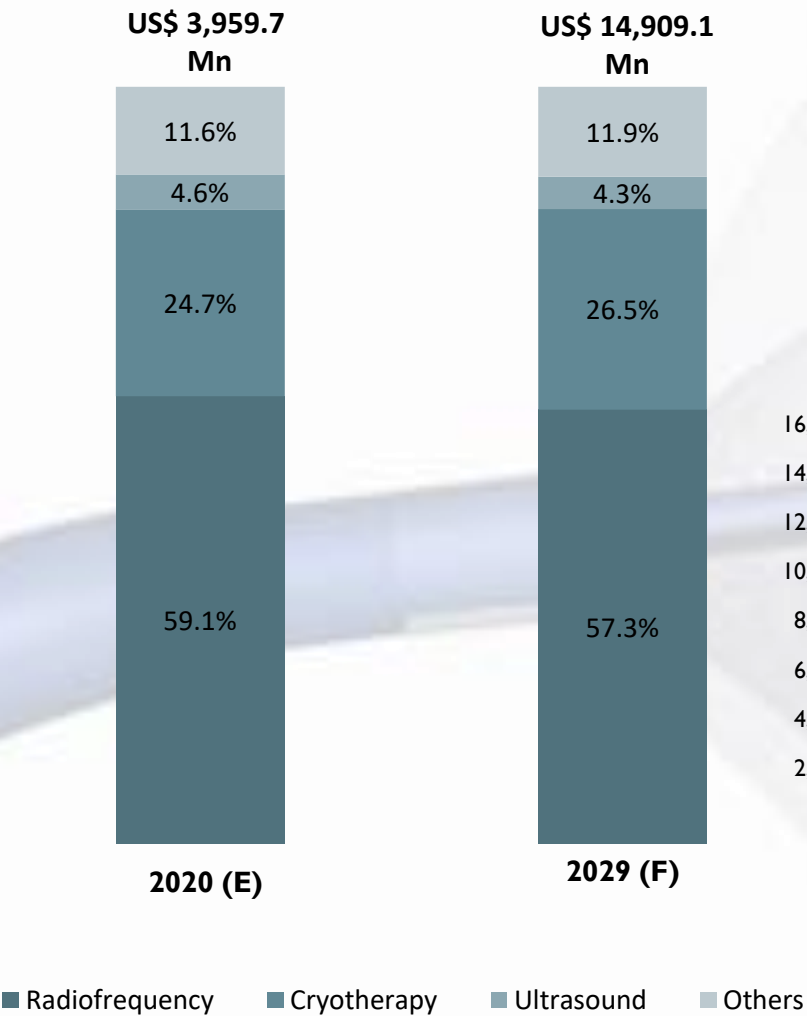


➤ **Figure highlights market attractiveness analysis for global Atrial Fibrillation Devices market by end user over 2020-2030**

- Radiofrequency segment dominated global Atrial Fibrillation Devices market in terms of revenue in 2020, with attractiveness index of 2.3 over the forecast period
- Revenue from irrigated ablation catheters segment is anticipated to increase at a CAGR of 14.5% over 2020-2030, to reach US\$ 1,464.5 Mn by 2030
- Cryotherapy is second-most lucrative market by technology for global Atrial Fibrillation Devices market, with attractiveness index of 1.1 during the forecast period
- Multi-electrode segment is accounted for more 80.0% value share in 2020 for cryoablation and is projected to account for 88.4% share by 2030 end and it is growing with CAGR of 16.2%

**GLOBAL ATRIAL FIBRILLATION DEVICES MARKET ANALYSIS 2015-2019
AND FORECAST 2020–2030, BY END USER**

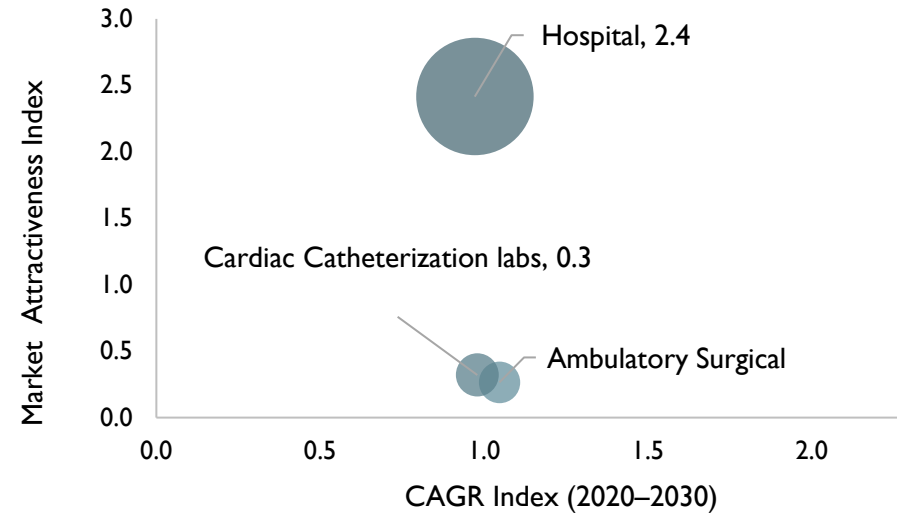
Global Atrial Fibrillation Devices Market Analysis 2015-2019 and Forecast 2020-2030, By End User



Global Atrial Fibrillation Devices Market Value (US\$ Mn) Analysis and Forecast 2015–2030, By End User

End User	2015 (A)	2016 (A)	2017 (A)	2018 (A)	2019 (A)	2020 (E)	2021 (F)	2022 (F)	2023 (F)	2024 (F)	2025 (F)	2026 (F)	2027 (F)	2028 (F)	2029 (F)	2030 (F)	CAGR % (2020– 2030)
Hospital	1,849.0	2,047.6	2,274.8	2,539.6	2,857.2	3,188.5	3,587.3	4,075.3	4,661.2	5,350.4	6,143.4	7,051.6	8,076.8	9,227.3	10,494.0	11,889.7	14.1%
Ambulatory Surgical Centers	200.2	230.2	260.2	289.9	320.4	348.4	381.3	423.4	477.9	546.4	631.3	736.3	867.6	1,026.0	1,212.2	1,428.5	15.2%
Cardiac Catheterization Labs	216.1	248.1	287.2	329.6	373.7	422.7	471.8	520.3	570.1	627.1	706.7	810.1	942.1	1,106.9	1,326.4	1,590.9	14.2%
Total	2,265.3	2,525.9	2,822.1	3,159.1	3,551.3	3,959.7	4,440.3	5,019.1	5,709.2	6,523.9	7,481.4	8,598.1	9,886.5	11,360.3	13,032.6	14,909.1	14.2%

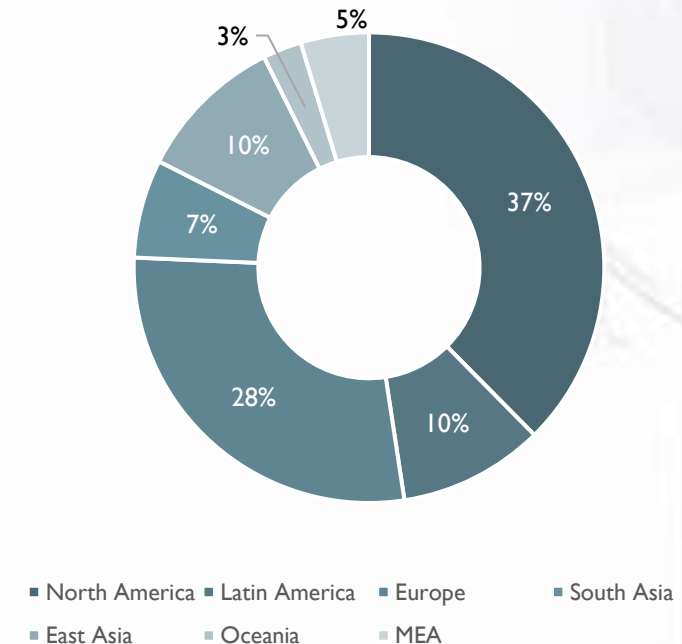
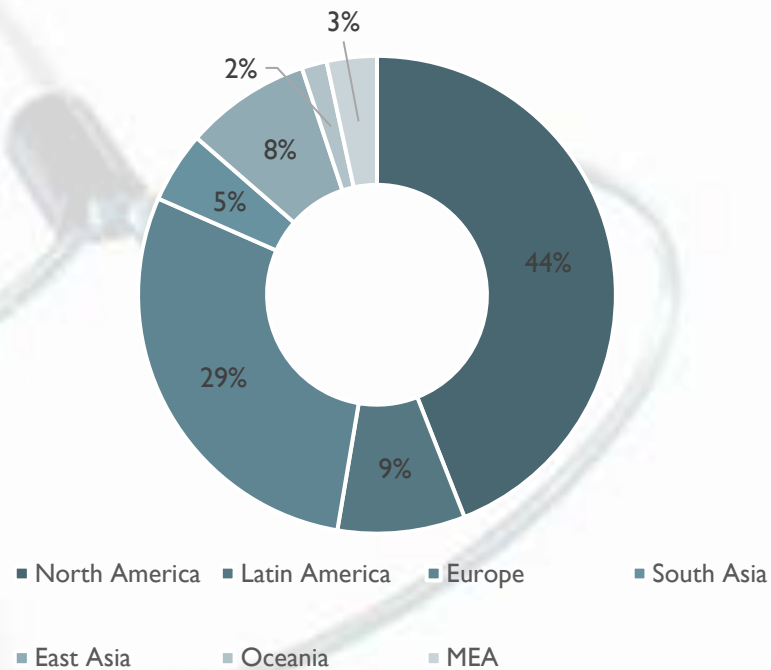
Global Atrial Fibrillation Devices Market Attractiveness Analysis 2020-2030, by End User



- Figure highlights market attractiveness analysis for global Atrial Fibrillation Devices market by end user over 2020-2030
- Hospital segment dominated global Atrial Fibrillation Devices market in terms of revenue in 2020, with attractiveness index of 2.4 over the forecast period
- Revenue from hospital segment is anticipated to increase at a CAGR of 14.1% over 2020-2030, to reach US\$ 11,889.7 Mn by 2030
- Cardiac Catheterization Laboratories is second-most lucrative market by end user for global Atrial Fibrillation Devices market, with attractiveness index of 0.3 during the forecast period

**Global Atrial Fibrillation Devices Market Analysis 2015-2019 And Forecast
2020–2030, By End REGION**

Global Atrial Fibrillation Devices Market Analysis 2015-2019 and Forecast 2020-2030, By Region



- The above figures highlight the global atrial fibrillation devices market analysis by region 2019-2030
 - North America dominates the global atrial fibrillation devices market in terms of revenue owing to increasing prevalence cases and continuous technological advancements.
 - The North America atrial fibrillation devices market grows from US\$ 1,563.7 Mn in 2019 to 5,603.9 Mn in 2030. This represents the CAGR of 12.5%
 - Europe accounts for 29% of overall revenue share by region and is expected to grow at a CAGR of 13.8% during the forecast period

Global Atrial Fibrillation Devices Market Value (US\$ Mn) Analysis and Forecast 2015–2030, By Region

Country	2015 (A)	2016 (A)	2017 (A)	2018 (A)	2020 (A)	2020 (E)	2021 (F)	2022 (F)	2023 (F)	2024 (F)	2025 (F)	2026 (F)	2027 (F)	2028 (F)	2029 (F)	2030 (F)	CAGR % (2020–2030)
North America	1,054.1	1,160.1	1,278.6	1,411.3	1,563.7	1,723.5	1,910.1	2,132.5	2,394.3	2,698.8	3,050.6	3,452.8	3,907.2	4,416.2	4,982.0	5,603.9	12.5%
Latin America	183.7	208.1	236.1	268.4	306.3	345.6	392.2	448.7	516.9	598.2	695.2	810.2	945.4	1,102.7	1,284.3	1,491.3	15.7%
Europe	655.5	731.4	817.4	914.9	1,027.6	1,145.0	1,282.5	1,447.6	1,643.9	1,875.0	2,145.3	2,458.5	2,817.0	3,223.7	3,681.0	4,189.3	13.8%
East Asia	94.1	108.7	125.9	146.2	170.6	195.7	225.8	262.9	308.1	363.0	429.6	509.9	606.1	720.0	853.9	1,009.2	17.8%
South Asia	179.2	203.4	231.4	263.9	302.2	342.0	389.3	447.0	516.5	599.8	699.3	817.6	956.7	1,118.5	1,305.3	1,518.3	16.1%
Oceania	32.3	37.5	43.8	51.3	60.5	69.9	81.4	95.5	112.9	134.2	160.4	192.5	231.4	278.1	333.6	398.8	19.0%
MEA	66.4	76.7	88.9	103.2	120.3	137.9	159.0	184.9	216.5	254.8	301.0	356.5	422.8	501.0	592.6	698.3	17.6%
Total	2,265.3	2,525.9	2,822.1	3,159.1	3,551.3	3,959.7	4,440.3	5,019.1	5,709.2	6,523.9	7,481.4	8,598.1	9,886.5	11,360.3	13,032.6	14,909.1	14.2%

Global Atrial Fibrillation Devices Market Attractiveness Analysis 2020-2030, by Region

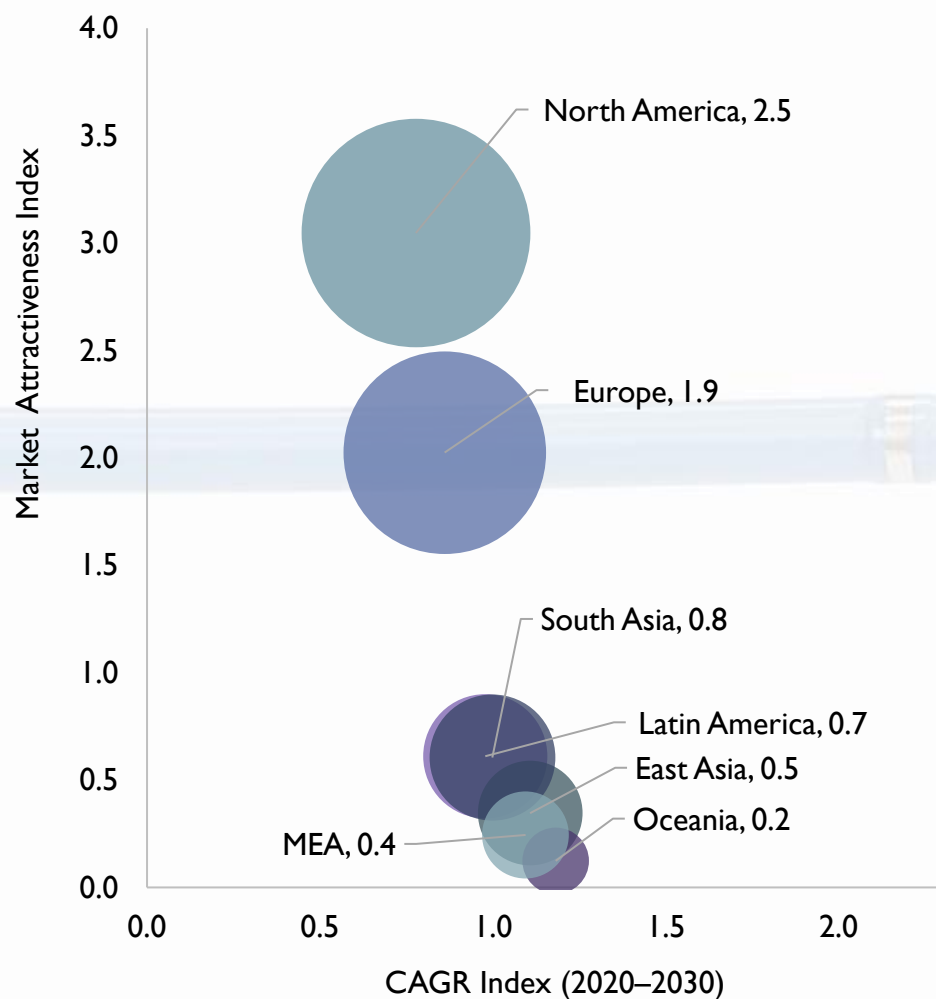
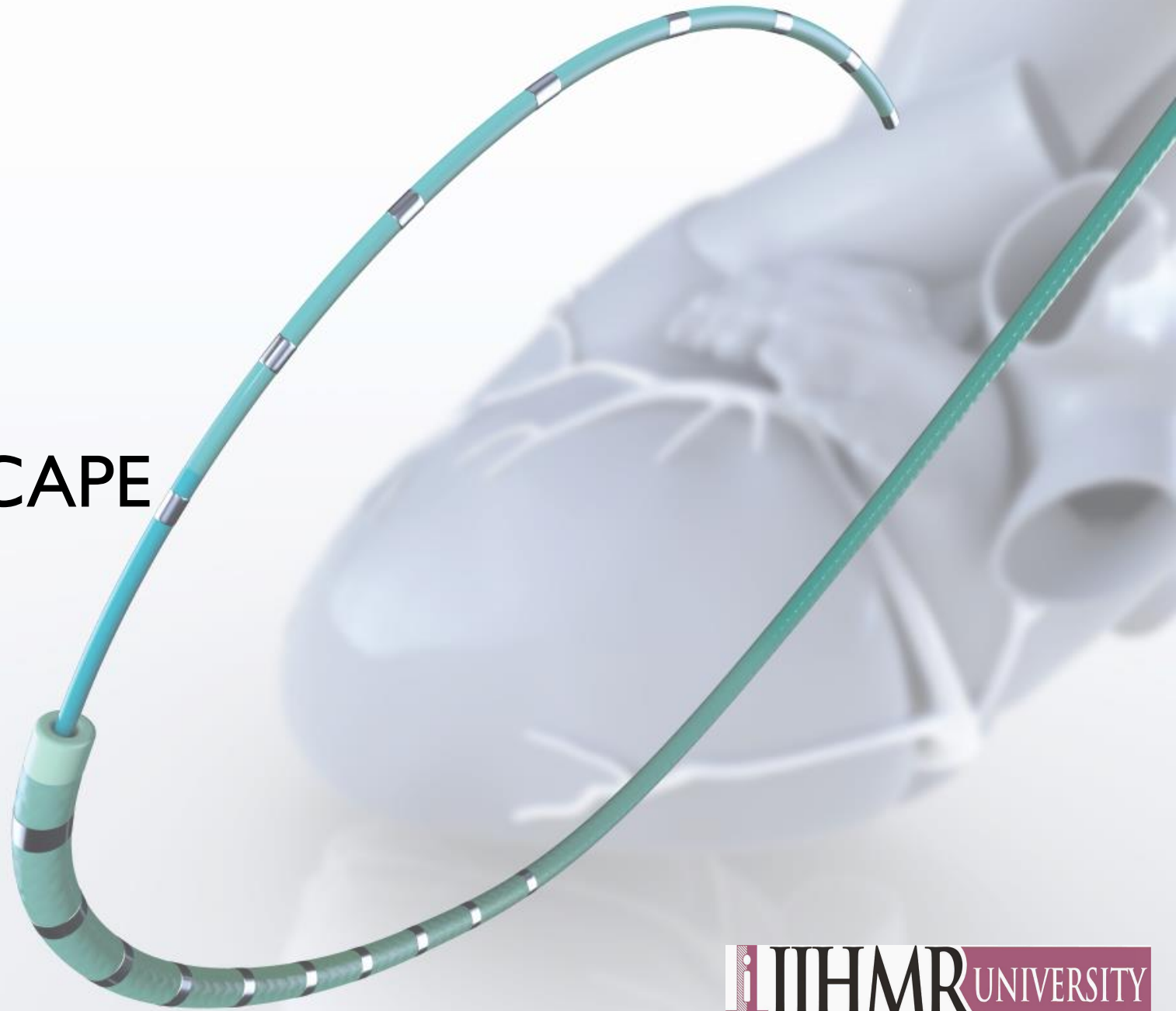


Figure highlights market attractiveness analysis for global Atrial Fibrillation Devices market by country over 2020-2030

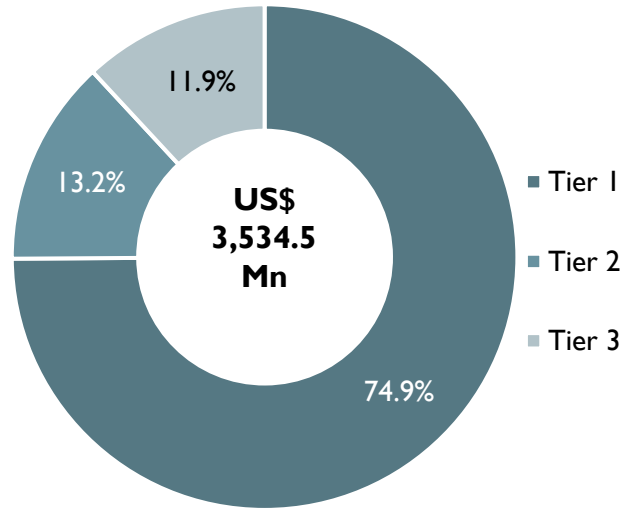
- North America dominated global Atrial Fibrillation Devices market in terms of revenue in 2020, with attractiveness index of 2.5 over the forecast period
 - Revenue from North America market is anticipated to increase at a CAGR of 12.5% over 2020-2030, to reach US\$ 5,603.9 Mn by 2030
- Europe is the second-most lucrative country for the global Atrial Fibrillation Devices market, with attractive index of 1.9
 - Europe Atrial Fibrillation Devices market expected to show incremental opportunity of US\$ 3,044.3 Mn over the forecast period of 2020-2030
- East Asia is third most lucrative country for global Atrial Fibrillation Devices market with attractiveness index of 0.5 during the forecast period

COMPETITIVE LANDSCAPE

Section -



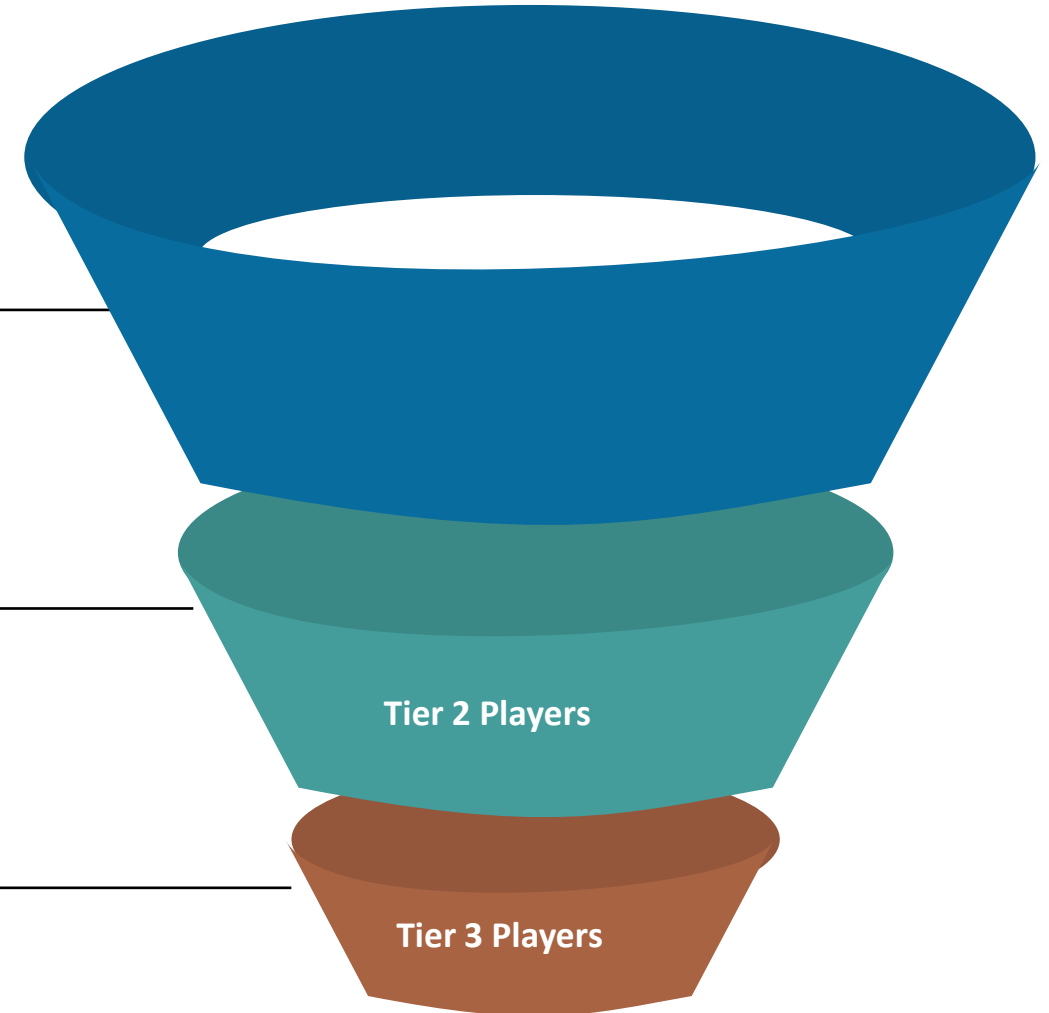
Global Atrial Fibrillation Devices Market – Tier Structure Analysis



Tier 1
Biosense Webster, Inc.
Abbott Laboratories
Medtronic Plc
Boston Scientific Corporation

Tier 2
ArtiCure, Inc.
Life Line Japan Co.
Biotronik SE & Co. KG

Tier 3
MicroPort Corporation
Biomerics
CathRx
Others

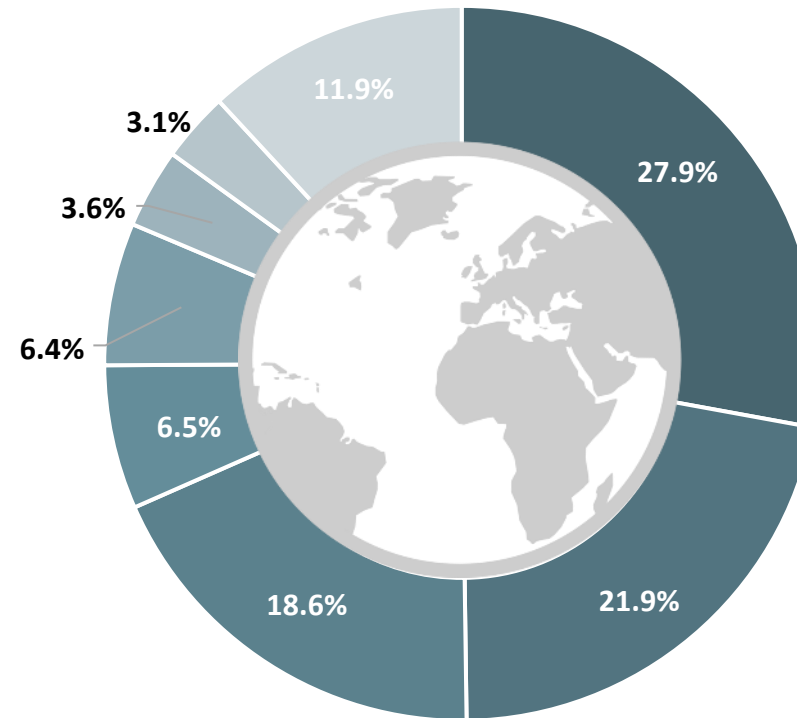


Global Atrial Fibrillation Devices Market : Company Share Analysis, By Value (2019)

Biosense Webster, Abbott Laboratories, Medtronic Plc, Boston Scientific Corporation and ArtiCure, Inc. collectively contributed more than 80% revenue share of global Atrial Fibrillation Devices market in 2019.

Top Five Market Players Contribution in 2019

US\$ 2,875.9 Mn

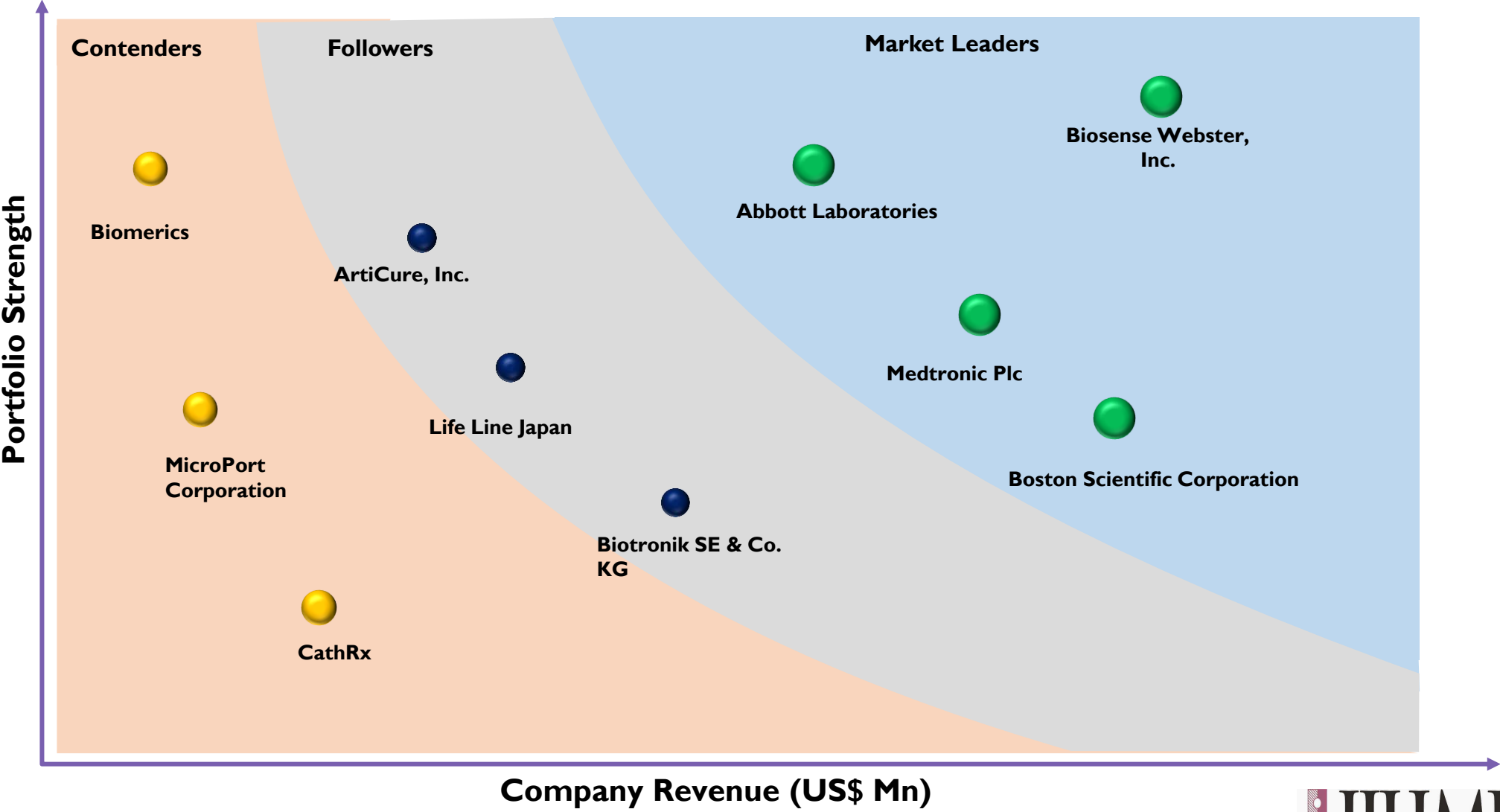


**Global Atrial Fibrillation Devices Market
Value 2019**

US\$ 3,551.3 Mn

- Biosense Webster, Inc. (Johnson & Johnson)
- Abbott Laboratories
- Medtronic Plc
- Boston Scientific Corporation
- ArtiCure, Inc.
- Japan LifeLine Co., Ltd.
- Biotronik
- Others

Global Atrial Fibrillation Devices Market: Key Players – Market Concentration



SWOT Analysis

STRENGTHS

- Rising technological innovation
- Growing geriatric population
- Increased prevalence of renal and cardiovascular diseases
- Favorable reimbursement scenario

WEAKNESSES

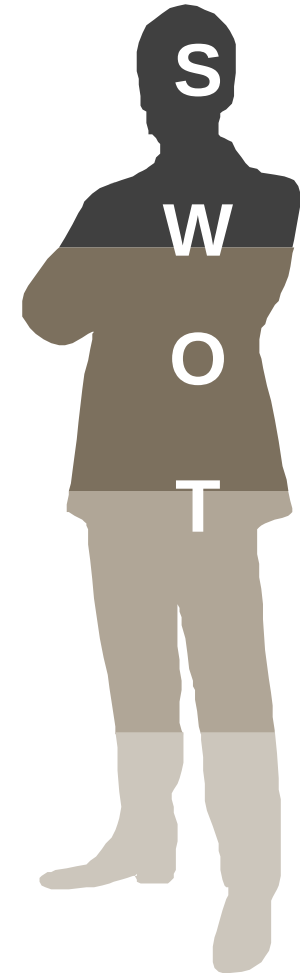
- Difficulty in using new equipment
- Stringent regulatory scenario
- Lack of skilled worker.
- Limited availability of clinical data to validate the therapeutic efficacy of ablation devices.
- Surgical ablation takes a lot of time

OPPORTUNITIES

- Increase in demand for minimally invasive treatments
- Value Based Health care

THREATS

- Political impact
- Market demand



Global Atrial Fibrillation Devices Market: Competition Dashboard

Company	Revenue (2019)	Target Product Contribution	Est. Global Market Share	Portfolio Strength	Regional Presence					Growth Strategy
					NA	LA	EU	APAC	MEA	
Biosense Webster, Inc. (Johnson & Johnson)	US\$ 82,059 Mn	~22%	 ~40.5%		✓ ☐	✓ ☐	✓ ☐	✓ ☐	✓ ☐	
Abbott Laboratories	US\$ 31,904 Mn	~20%	 ~20.2%		✓ ☐	✓ ☐	✓ ☐	✓ ☐	✓ ☐	  
Medtronic Plc	~US\$ 30,557 Mn	~12%	 ~19.4%		✓ ☐	✓ ☐	✓ ☐	✓ ☐	✓ ☐	
Boston Scientific Corporation	US\$ 10,735 Mn	~08%	 ~6.8%		✓ ☐	✓ ☐	✓ ☐	✓ ☐	✓ ☐	
Biotronik SE & Co. KG	US\$ 795.2 Mn	~05%	 ~0.50%		✓ ☐	✓ ☐	✓ ☐	✓ ☐	✓ ☐	
MicroPort Corporation	US\$ 793 Mn	~02%	 ~0.50%		✓ ☐	✓ ☐	✓ ☐	✓ ☐	✓ ☐	
ArtiCure, Inc.	US\$ 231 Mn	~01%	 ~0.20%		✓ ☐	✓ ☐	✓ ☐	✓ ☐	✓ ☐	
Life Line Japan Co.	US\$ 418.8 Mn	~01%	 ~0.27%					✓ ☐		
Biomerics	US\$ 60.1 Mn	~0.5%	 ~0.04%		✓ ☐					

Low  High

 Licensing Patent

 Partnership

 Acquisition/ Collaboration

 Contract/ Agreement

 Expansion

 New Launch

KEY COMPETITORS

**Boston
Scientific**

 **Biosense Webster®**
a Johnson & Johnson company

 **Abbott**

AtriCure

*Global Atrial Fibrillation Devices
Market Value 2019*

US\$ 3,551.3 Mn

 **Medtronic**

 **Japan Lifeline**

 **BIOMATERIALS**
ADVANCED CATHETER

 **BIOTRONIK**
excellence for life

CONCLUSION

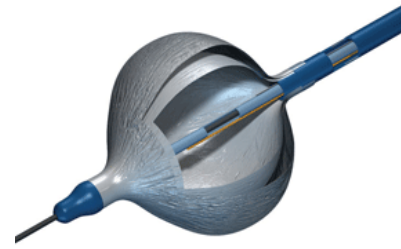
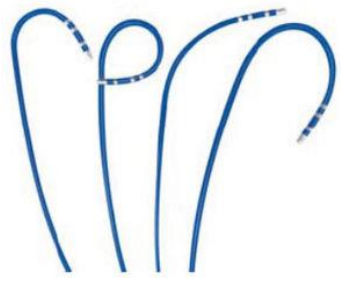
- The global atrial fibrillation devices market was valued US\$ 3.5 Bn in 2019 and expected to reach US\$ 14.9 Bn by the end of 2030. This represents the CAGR of 14.2% during the forecast period. Several economic and industrial factors are responsible for the growth of atrial fibrillation market.
- There are several competitors in this market and a few others are still attempting to gather safety and efficacy data to bring their products in the market.
- Biosense Webster and Abbott Laboratories are leading the market of percutaneous thrombectomy
- U.S. is the most penetrated market in the world and is responsible for most of the unit sales.
- In Asia Pacific countries, India and China, respectively, are expected hold the prominent share in the market owing to increase in prevalence of atrial fibrillation and rising awareness amongst people coupled with increasing healthcare expenditure by government.

DISCUSSION

- Players are Focusing on marketing products by Indian & Chinese manufacturers to enhance its sales on global level. The companies are also focusing on Strengthening and improving sales & distribution as a part of network marketing strategy
- Tie-ups with distributors and other channel partners ensure continuous product availability and expands product reach both geographically and in traditional end-use settings
- Acquisitions, capacity expansion, product launches and adoption of technological platforms are the key strategies adopted by manufacturers to increase the sale in different geographies.
- Additionally, manufacturers are focusing on forward integration to partner with wholesalers, distributors and other channel partners to gain ownership over the value chain.
- Moreover, government and regulatory bodies across various countries are shifting towards value-based healthcare model to reduce the healthcare burden, especially in developed countries

DISCUSSION

- Several factors such as rising prevalence of atrial fibrillation, ongoing technological advancements, favorable medical device reimbursements scenario, increasing demand for minimally invasive surgeries, and rising expenditure on healthcare across emerging markets are making an impact on the growth of the atrial fibrillation device market.
- However, the stringent regulatory scenario, limited patient awareness resulting in delayed treatment for atrial fibrillation, and dearth of skilled and well -trained electrophysiologist to perform EP studies are the key challenges faced by majority of the atrial fibrillation device manufacturers across the globe.



THANK YOU!

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