Study on Market Analysis of Atrial Fibrillation Devices

By

Aakash Simon

Dissertation submitted in partial fulfillment of the requirements of the degree

MBA Hospital and Health Management

Academic year, 2018-2020

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ABBREVIATIONS:

Acronym/Initialism	Definition
AF	Atrial Fibrillation
Afib	Atrial Fibrillation
RA	Right Atrium
RV	Right Ventricle
LAA	Left Atrial Appendage
FDA	Food and Drug Administration
CDC	Center for Disease Control and Prevention
AHA	American Heart Association
EHA	European Heart Association
SA	Sino-Atrial Node
RF	Radio Frequency
EP	Electrophysiology
ASP	Average Selling Price
CAGR	Compound Annual Growth Rate
ESC	European Society of Cardiology
CABG	Cardiopulmonary Bypass Graft
KOL	Key Opinion Leaders
RoW	Rest of World
Bn	Billion
Mn	Million
WHO	World Health Organizations
Y-o-Y	Year-on-Year
CS	Coronary Sinus
FIRM	Focal Impulse Rotor Modulation
ACC	American College of Cardiology

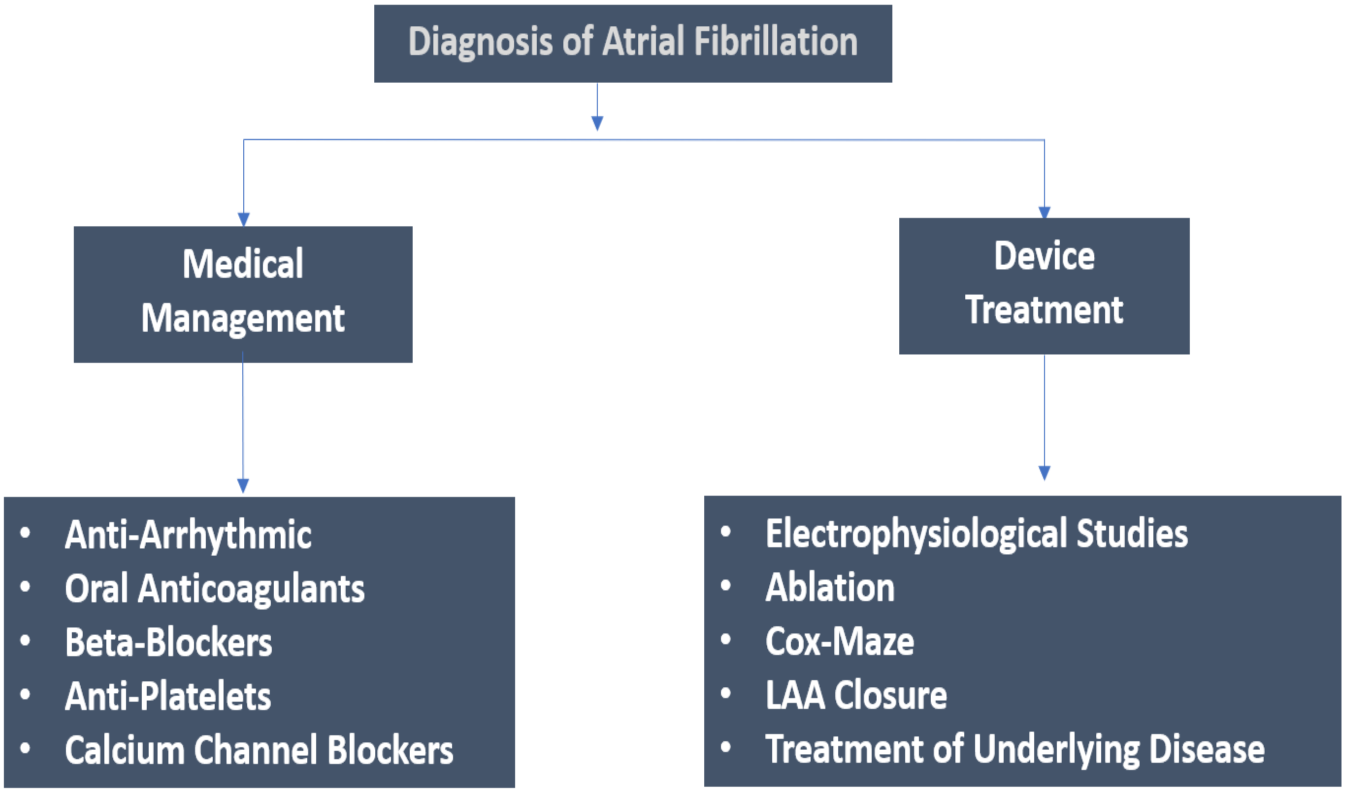
ABSTRACT

There is global burden of atrial fibrillation in the world. The growing patient population with cardiovascular diseases, followed by the aging population are the major market. The study aims to understand the global atrial fibrillation devices market. The competitive landscape of the major players in the device segment, the products offered by them, the major challenges, drivers and limiting factors of the market were identified. The study included 100 electrophysiologists from European Union. The information about the major acquisitions, mergers, clinical trials, FDA approvals, product coverage, emerging products were gathered through secondary research which was verified and supplemented by industry experts and key opinion leaders. Hence, the forecast was given for the period of ten years about the market.

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.

Atrial fibrillation is a global health care problem evidence suggest an increase in prevalence and incidence. Every 1 in 1000 person suffers atrial fibrillation due to some reason. According to 2013 study by Center for Disease Control and Prevention, the worldwide estimated number of individuals with Afib in 2010 was 33.4 million. Moreover, it is estimated that 2% of people younger than age 65 and 9% of people older than age 65 in U.S. suffers from atrial fibrillation. This number is estimated to be double in 2030. The worldwide prevalence of AF is comparatively less than other disease but the region wise prevalence vary due to certain factors.



The figure below illustrates treatment algorithms for Atrial Fibrillation in the prevalent populations.

- 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

Market Segmentation Covered Under Atrial Fibrillation Devices:

The atrial fibrillation devices market is segmented on the basis of product type, technology, end user and region.

Market Taxonomy	
By Product	**By Technology**
Diagnostic	Radiofrequency
• Conventional	Cryotherapy
▪ Steerable	Ultrasounds
▪ Fixed	FIRM
• Mapping Catheters	others
• Coronary Sinus Catheters	
• Intracardiac Catheters	
Therapeutic	
• Electrophysiology Ablation	
○ RF Ablation	
▪ Conventional RF Ablation Catheters	
▪ Irrigated RF Ablation Catheters	
○ Cryoablation	
▪ Single Electrode	
▪ Multi Electrode	
○ Laser-Based Ablation	
• Maze Surgical	
○ RF Ablation Clamps	
○ Cryoprobes	
LAA Management Devices	

By End User	By Region
Hospital	North America
Cardiac Catheterization Laboratory	Latin America
Electrophysiology Laboratories	Asia Pacific
	Oceania
	Middle East & Africa

RATIONALE

Growing prevalence of atrial fibrillation amongst geriatric as well as adult population are the major driver of this market. As the geriatric population is increasing, there is a corresponding rise in number of patients suffering from atrial fibrillation which requires treatment. The primary treatment of choice for atrial fibrillation is electrophysiological study and ablation of a minimally invasive procedure and it is a permanent cure of this disease. Electrophysiology and left atrial appendage management is the most commonly performed procedure and is widely accepted for the treatment of atrial fibrillation after medical management. During the procedure, different type of catheters is passed through the femoral vein to left atrium and pulmonary veins. The site of generation of arrhythmia is mapped with the help of specialized catheters in the 3D mapping system and the ablation of muscle is carried out.

This Report provides information on:

- Atrial fibrillation devices market estimates and forecasts.
- Factors driving the growth of atrial fibrillation devices market.
- Geographically, the potential of atrial fibrillation devices market in the regions (North America, Latin America, Europe, Asia Pacific, Oceania, Middle East & Africa

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)?

OBJECTIVES

- To analyze and estimate the global market of 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

- Research Design**-** Market Research (Descriptive Study)
- Type of Data- A combination of Primary and Secondary data
- Data collection tool-Questionnaire, Telephonic Interviews
- Data Analysis tool- MS Excel

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

- The shipment cost of device and currency fluctuation across various geographies is ignored while calculating the average selling price
- the expected change in the regulatory scenario for device approval in different countries is not considered while forecasting the market value for atrial fibrillation devices

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 interviewers 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 be average selling prices (ASPs) will calculated country wise. These ASPs has been multiplied with the volume to calculated the overall market value

DATA VALIDATION:

During data analysis, multiple sources which include secondary research as well as from primary sources. Once all this data is collected and triangulated, it is shared with industry experts and key opinion leaders (KOLs) for further validation, who provide us valuable insights on trends, adoption rates, treatment regime, alternative therapy, key strategies and developments, competitive dynamics. Secondary data sources include our database, paid databases as well as publicly available data sources, etc.

EXPERT PANEL VALIDATION:

The panel of experts are re-interviewed to cross-verify the databases and forecasts. The expert panel comprises marketing managers, product specialists, international sales managers from medical device companies, academics from research universities, KOLs from hospitals, consultants from venture capital funds, and distributors/suppliers of medical devices and related supplies. Historic data and forecasts undergo scrutiny by these expert panel and are adjusted in accordance with their feedback.

DEVELOPING FORECAST:

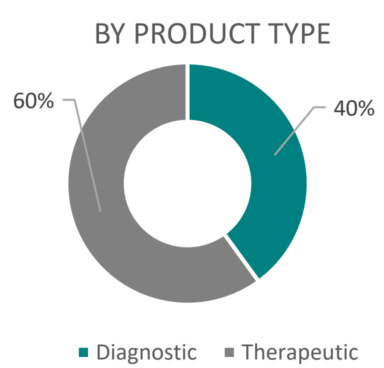
- Quantitative and qualitative assessment of basic factors driving demand, economic factors/cycles and growth rates and strategies utilized by key players in the market is analysed in detail while forecasting, in order to project Year-on-Year growth rates.
- These Y-o-Y growth projections are checked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

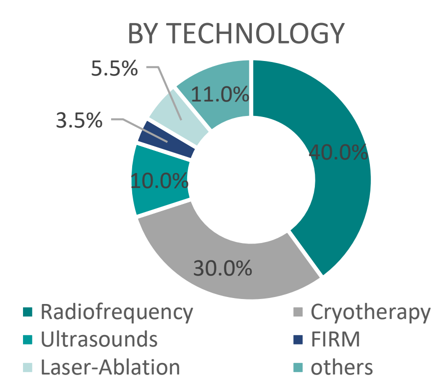
Steps Considered for Market Estimation

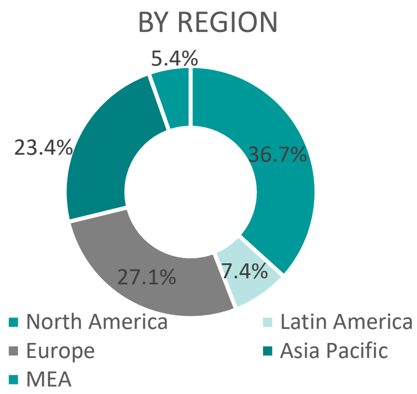
- The incidence and prevalence model is used to build the market numbers based on that forecasting is done
- Country wise prevalence is taken to calculate the treatment and adoption rate
- With this data treatment seeking population is validated from key opinion leaders and market experts
- The Number 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.

Global Atrial Fibrillation Devices Market: Executive Summary







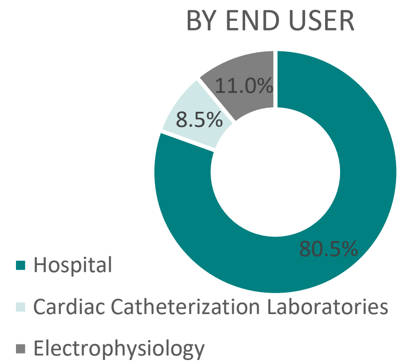


Figure 1 Figure 2 Figure 3 Figure 4

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

- cardiovascular diseases have typically been viewed as affliction of the wealthy and industrialized society. industrialization has been increased in the past few decades and is expected to show more rapid growth in the future. This rapid industrialization has upsurge the demand for electrophysiological study and various arrhythmia treatment
- The excessive lifestyle related diseases have come in the forefront such as obesity, hypertension, diabetes and pre-existing heart disease are the major responsible factors causing atrial fibrillation amongst adults and elders. Also, rise in cardiovascular diseases due to lack of physical activity and smoking is expected to be the leading cause of atrial fibrillation

Shift Towards Value-Based Healthcare Model

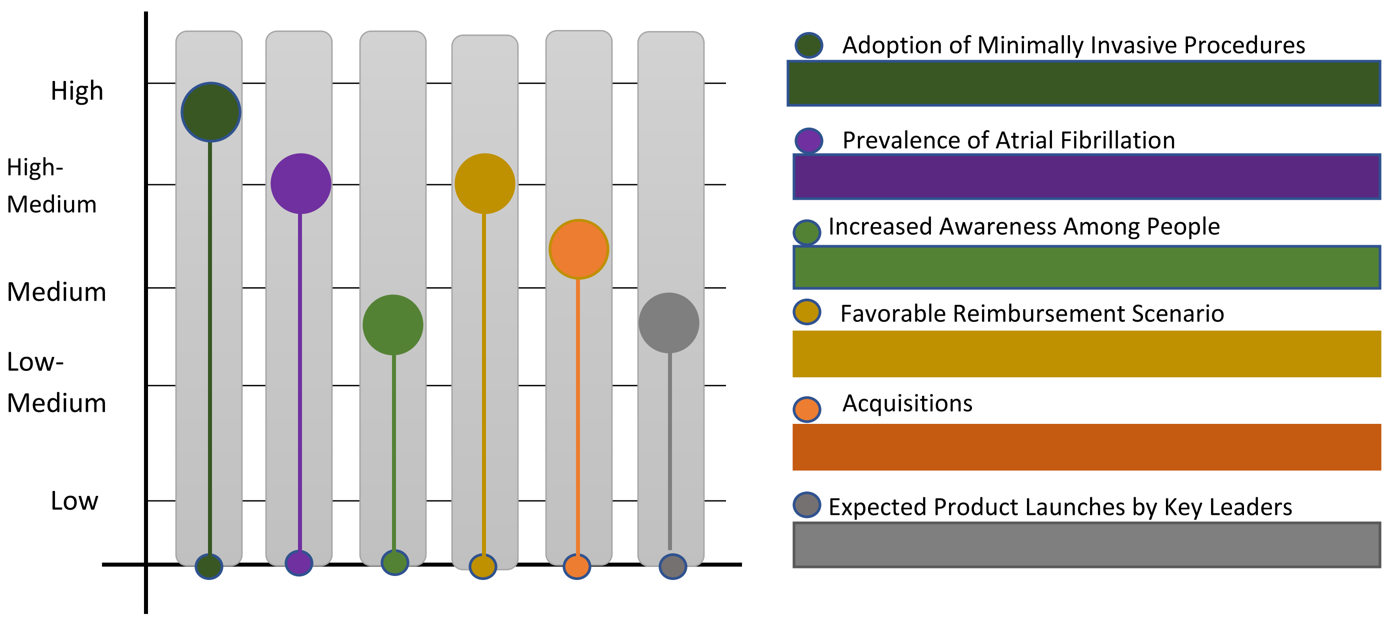
- Government and regulatory bodies across the countries are adopting various cost-containment measures to reduce the healthcare burden, especially the developed economies. This shift from volume to value-based system is driven by various initiative taken upon by the government and healthcare service providers. The value-based healthcare model is based upon quality-based system in which fees are paid based on the outcome, patient centricity in which the care is given to promote health and wellness rather than excessive treatment, profit, risk sharing, price control, and competitive tendering.
- The value based-healthcare model help companies to achieve maximum value for money invested in healthcare, and thus improve outcome through integrated care pathway, but at the same time is imposing pricing pressure on manufacturing companies affecting investments in R&D of innovative medical treatment technologies.

Emerging Countries to Increase Investment in Healthcare Sector

- Rising prevalence of chronic diseases, infrastructure investments and technological advancements are some key factors that helped the increased investment in the healthcare sector. Healthcare stakeholders are implementing payment reform such as value-based payment model that has helped providers, payers, and patients achieve the best outcome at the lowest cost

- Governments are also moving the needle by adopting universal health coverage and investing more in healthcare sector
- According to World Bank, in the recent years various emerging economies of Asia-Pacific have witnessed increase in the ease of doing business ranking. As a result, these countries are witnessing spur in the FDI (Foreign Direct Investment). Developing region such as India, Malaysia, Indonesia and Pakistan have outstripped economic growth compared to the developed region. this in-turn is expected to drive the growth in investment across the segments in the healthcare sector in these countries. In 2014, India witnessed 47% Y-o-Y increase in FDI, making it a major destination for FDI. This is expected to create new opportunities for the market players in these regions.

Global Atrial Fibrillation Devices Market: Forecast Factors



Global Atrial Fibrillation Devices Market: Demand-Side Drivers

Growing Prevalence of Atrial Fibrillation

- Increase prevalence of atrial fibrillation amongst geriatric as well as adult population is well recognized. The incidence is double for elderly population as the age increases. Obesity, hypertension, diabetes, sleep apnea and other underlying heart disease are some major leading cause responsible for early age mortality with atrial fibrillation.
- According to American Heart Association, it is estimated that around 2.7 million Americans are living with atrial fibrillation. This estimate is expected to increase by 2030. Hence, the opportunity for atrial fibrillation device market is anticipated to increase during the forecast period.

- Moreover, according to the report published in European Society of Cardiology, prevalence of atrial fibrillation in European adults is estimated to be more than double that was reported just one decade earlier, ranging from 1.6% in Italy, Iceland, and England to 2.3% in Germany, and 2.9% in Sweden.

Increasing Awareness for Cardiac Arrhythmia

  - Popularity and growing population about cardiac arrhythmia and its treatment will significantly contribute to upsurge the demand for atrial fibrillation devices market in the near future. Two main catheter ablation approaches for PV isolation are cryoablation and radiofrequency ablation which are easier to use and provide safety.
  - Initiative taken by various organizations to create awareness and prevention guidelines amongst people has significantly increased awareness regarding lifestyle modifications in regular habits. For Instance, the month of September is precisely donated for the disease, known as National Atrial Fibrillation Awareness Month.

Use of Innovative Technique to Ablate the Site of Arrhythmia

- Traditionally catheter-based ablation is used to treat patients with atrial fibrillation that have certain limitation in reducing the chance of complications after the procedure. thus, the new line of treatment option such as watchman devices, FIRM ablation, maze and hybrid ablation are introduced and well performed globally.
- The focal impulse and rotor modulation (FIRM) ablation technique is used to more precisely located in the area of arrhythmia. It's a breakthrough mapping technology, first developed and performed by a Stanford Cardiologists in the year 2009.
- Therefore, the increasing use of the atrial fibrillation devices for these procedures will upsurge the growth of atrial fibrillation devices market during the forecast period

Growing Demand for Minimally Invasive Surgical Treatment

- Demand for minimally invasive surgical procedure has increased due to technological advancement such as catheter-based vascular procedure and type of 3D laparoscopic inventions. Mostly all procedures involve small incision to the body with minimum pain, higher accuracy and greater efficiency rate.
- The minimally invasive procedure for atrial fibrillation includes catheter-based ablation and maze surgery the two most widely practiced procedure all over the world. The catheter-based ablation

procedure involved incision of various catheters in to the heart through femoral vein, while maze procedure includes small cut in the left chest that uses various clamps and cryoprobes to scar or ablate the tissue. Maze is done on patients with underlying heart diseases such as CABG.

- According to Primary Key Opinion Leaders, radiofrequency catheter ablation is the most widely used and effective method for the treatment of atrial fibrillation. This factor contributes to upsurge the demand for atrial fibrillation devices in the coming years

Global Atrial Fibrillation Devices Market: Challenges

High Treatment Cost for Atrial Fibrillation

- The high upfront cost has a negative impact on overall adoption of devices by end-user, as the purchase and installation cost to set up electrophysiology lab, is relatively high. The lack of studies demonstrating effective utilization and outcome data from manufacturers might made it challenging for hospitals to justify investing in the electrophysiology platform.
- Moreover, the total annual cost incurred to treat atrial fibrillation is very high. According to the study conducted by European Society of Cardiology, the average cost of atrial fibrillation treatment in Europe five countries ranges 1,010 Euros to 3,335 Euros per year. These figures are estimated to be double with the increasing number of geriatric populations
- Therefore, high treatment cost as well as purchase an installation of EP lab is a setback for the growth of atrial fibrillation devices market.

Lack of Skilled and Experienced Professionals

- With the rapid increase of electrophysiology services, globally many organizations are facing challenges in finding and securing qualified professionals to accommodate the growth. According to Millennium Research Group (MRG), the atrial fibrillation ablation procedures is the fastest growing segment in this market, and is increasing with the annual rate of 16%. This procedure demand can be limited due to lack of electrophysiologist treating the diagnosed population.
- According to American College of Cardiology (ACC) 2009 study, there were 25,901 active cardiologists, with the shortage of over 4,400 Cardiologist. Of these active Cardiologist, around 64% were general and 21% were interventional while 7% were electrophysiologist.

- Also, there is a shortage of skilled EP technologist throughout the global to operate the active EP machine. Due to lack of availability of skilled professionals, the adoption of electrophysiology is less in the hospitals of developing economies.

Product Recall Affecting Overall Market Adoption

- Manufacturers are likely to suffer from recalled products, as they affect the company directly or indirectly owing to disturbance in net sales which is expected to hamper the growth of atrial fibrillation devices market during the forecast period
    - ❖ In January 2014, ArtiCure, Inc., issued a notice regarding recall of medical devices due to incorrect instruction of use label on the device, thereby impede the business growth.

Global Atrial Fibrillation Devices Market: Opportunities

Increasing Target Patient Pool Surging Demand for Ablation Procedures

- There has been a noticeable rise in number of patients suffering from non-valvular and valvular atrial fibrillation. Also, the risk of atrial fibrillation is noticed in patients suffering from hypertensions, obesity, diabetes, and other cardiovascular diseases.
- In 2017, atrial fibrillation was mentioned on 166,793 deaths certificates and was underlying cause of the deaths of 26,077 patients
- According to Centers for Disease Control and Prevention (CDC), 2% of individuals younger than 65 years old and 9% of people older than 65 years of age in U.S. have atrial fibrillation. This prevalence of atrial fibrillation is projected to be double by 2030.

High Focus on Development and New Launch

- Prominent market players of atrial fibrillation market devices are focusing on development and various organic and inorganic strategies in order to sustain the market competition and outreach to untapped geographies.
- For instance, in December 2018, Medtronic announced the first patient treated in terminate AF trail, a multi-center study evaluating two surgical ablation devices includes CryFlex and Cardioablate that are used in the treatment of AF in patients undergoing open heart surgical procedures thereby increasing the atrial fibrillation market growth.

Growing Investment on R&D

- Companies are focusing to invest on research & development to enhance its product services, technology and processes. Along with creating new products, companies are focusing on adding new features to existing product to enrich the portfolio
- Companies like Biosense Webster, Abbott Laboratories, Medtronic, and Boston scientific are actively focusing on R&D in the field of electrophysiology to develop new technologies that can be a platform for new possibilities in patient care.
- According to statistics, Abbott spent approximately USD 2.4 billion on R&D while Medtronic has spent more than USD 2.33 billion in 2019
    - ❖ For instance, in January 2020, ArtiCure, Inc., announced successful completion of patient enrolment of aMAZE clinical trial and FDA approval to continue access protocol.
    - ❖ In January 2019, an analysis published on American Heart Association, collected 5 years of data to reveal that Watchman device by Boston Scientific for left atrial appendage closure to prevent stroke in patient with AF is not only cost-effective compare to treatment with anti-coagulants but also save money over time.

Global Atrial Fibrillation Devices Market Trends:

- Growing demand for catheter-based AF ablation procedures
- Increasing strategic acquisitions and mergers by market leaders
- Growing focus of key players towards collaboration and partnership

Atrial Fibrillation Epidemiology

Countries	US	Europe	Canada	Brazil	Mexico	Germany	France	Italy
Prevalence	2%	2%	1%	0.7%	2%	2%	1%	1.6%
Diagnosed Population	25%	30%	33%	23%	16%	19%	21%	20%
Treatment Population	30%	30%	27%	21%	15%	17%	16%	17%

Countries	Spain	UK	Indonesia	Russia	India	China	Japan	South Africa
Prevalence	2%	1.9%	1%	0.5%	0.3%	0.6%	0.6%	4%
Diagnose Population	20%	19%	14%	16%	16%	13%	24%	20%

Treatment Population	17%	18%	15%	16%	15%	14%	18%	13%

Source: Global Burden of Disease Collaborative Network, FMI, 2019

COVID-19 Impact Analysis

Product Type

- On the basis of product type, the market is segmented into Diagnostic and therapeutic. Due to COVID 19 there has been decline in growth rate across all the product type. The decline in growth rate is expected due to less in demand of atrial fibrillation devices and delayed in procedures globally as all the manufacturers are shifting their practice and purchasing priorities to met the demand of a pandemic.
- Impact on production, demand, and supply chain is anticipated to impede overall growth of the atrial fibrillation devices Market

By Technology

- On the basis of technology, the market is segmented into radiofrequency ablation, cyroablation, laser-based ablation and ultrasound.
- There is slight decline in growth in technology segment is expected due to decrease in demand in pandemic situation where manufacturers and distributors are majorly focused in developing PPE, ventilators and diagnostic kits to meet the patient need.
- Other reason for decline in growth rate is minor delay in non-critical procedures and diagnostic procedures

By End User

- There is less demand for atrial fibrillation from end user during pandemic situation as hospitals and diagnostic centres are more focused in treating the COVID 19 infection patients.
- Doctors, nurses, hospital rooms, diagnostic labs, and capital equipment will be shifted from traditional uses to screening and treating coronavirus patients

By Region

- The impact of COVID19 on atrial fibrillation devices market results in the decline market growth for year 2020 globally due to hamper medical devices supply chain, less demand, slowdowns, staff shortages and lockdown impact the overall market growth.

DATA ANALYIS: (Findings and Forecast)

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

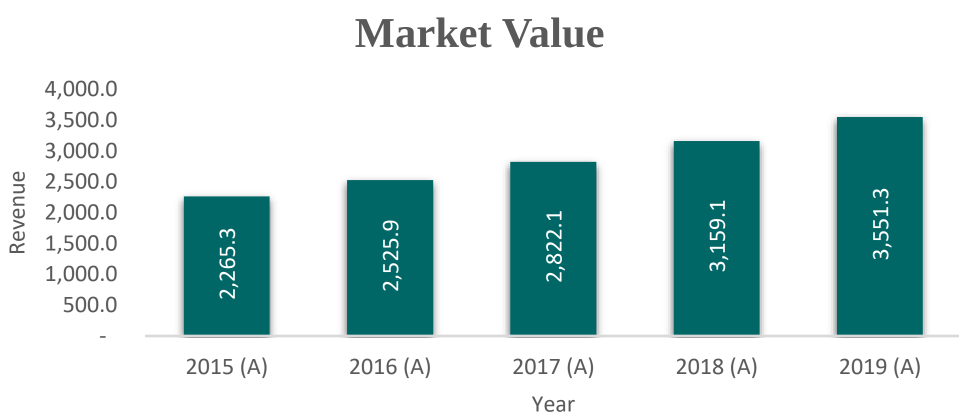


Figure 5: Global Atrial Fibrillation Devices Market Value Analysis (US$ Mn), 2015-2019

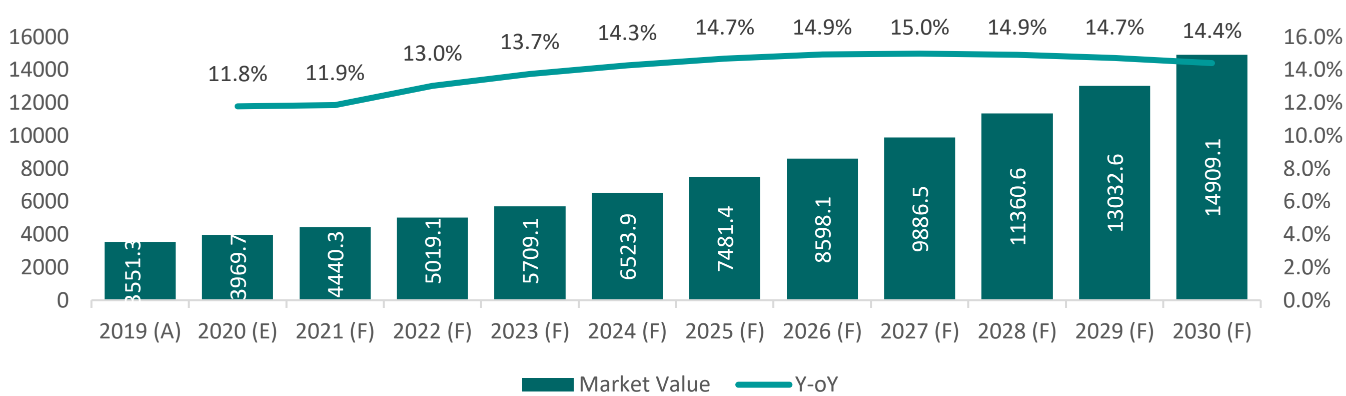


Figure 6: Global Atrial Fibrillation Devices Market Value Forecast (US$ Mn). 2020-2030

- Figures highlight Global Atrial Fibrillation Devices Market revenue and Y-0-Y growth over 2020-2030
  - Based on 2015 to 2019 historical data year on year growth rate is calculated and forecasting done to estimate the global atrial fibrillation devices market

- The global atrial fibrillation devices market grow from US$ 3,969.7 Mn to 14,909.1 Mn by 2030. This Represents the CAGR of 14.2% over the forecast period
- Global market for atrial fibrillation devices expected to represent absolute $ opportunity of US$ 480.7 Mn in 2020 and incremental opportunity of US$ 10,949.4 Mn between 2020 to 2030

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

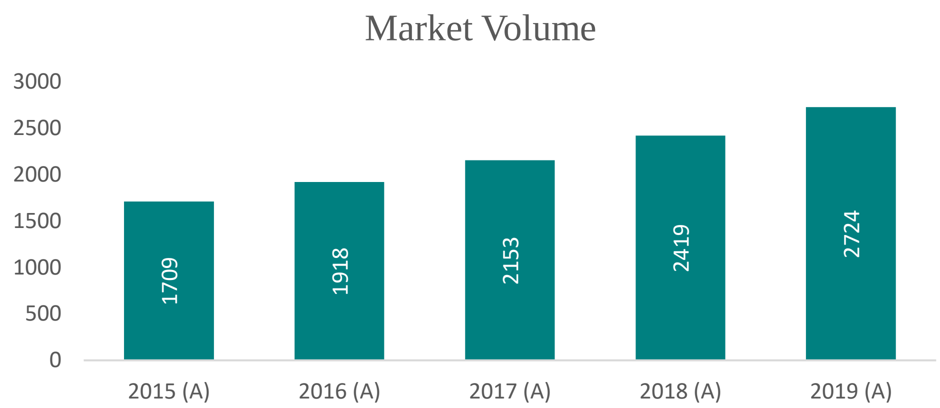


Figure 7: Global Atrial Fibrillation Devices Market Volume (`000) Unit Analysis, 2015-2019

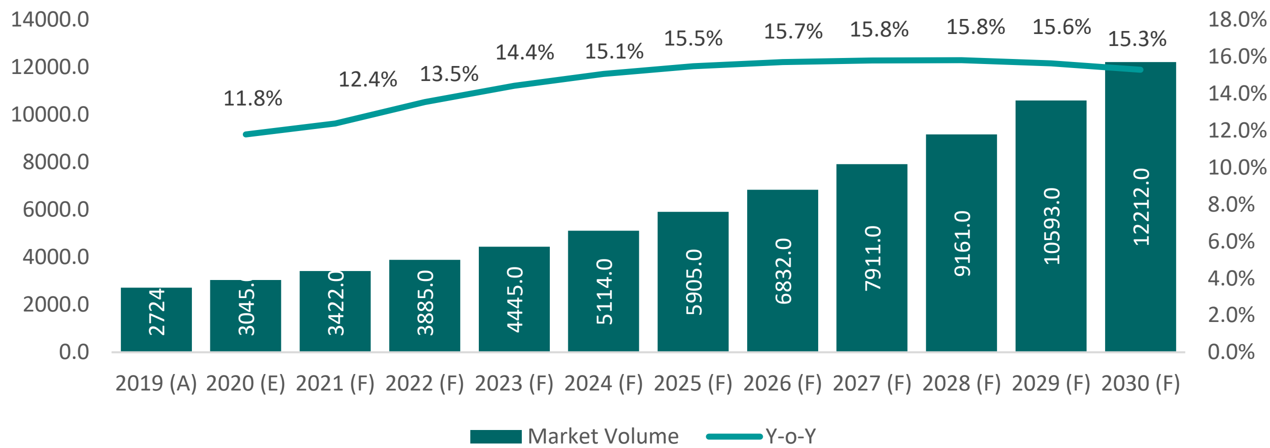


Figure 8: Global Atrial Fibrillation Devices Market Volume (`000) Unit Analysis, 2020-2030

- Figure highlights the Global Atrial Fibrillation Devices Market Volume (`000 Unit) Analysis
  - Based on model made from the prevalence rate and adoption rate the unit is calculated for the year 2018-2019 based on that forecasting is done till 2030 for global atrial fibrillation devices

- The Global Atrial Fibrillation Devices Market Grow from 3,045.0 thousand in 2020 to 12,212.0 by 2030 end in terms of volume. This Represents the CAGR of 14.9% over the forecast period
- Conventional EP Catheter is the leading segment which is then followed by mapping catheters in terms of volume. While EP catheter is expected to show significant growth over the forecast period

Global Atrial Fibrillation Devices Market: Opportunity Assessment 2020-2030

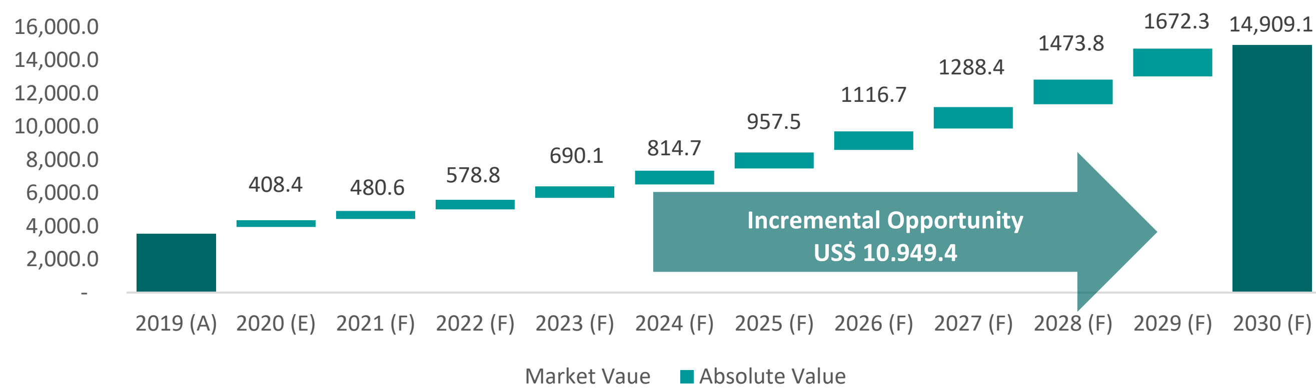
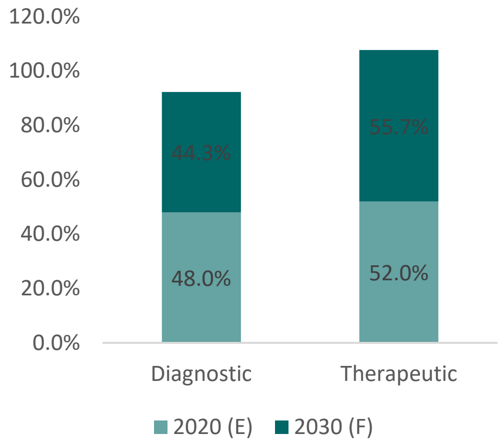


Figure 9: Global Atrial Fibrillation Devices Market Absolute $ Opportunity, 2019-2030

- The above insights highlight the Atrial Fibrillation Devices Market Opportunity from 2020-2030
- This is traditionally overlooked when an analyst 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

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



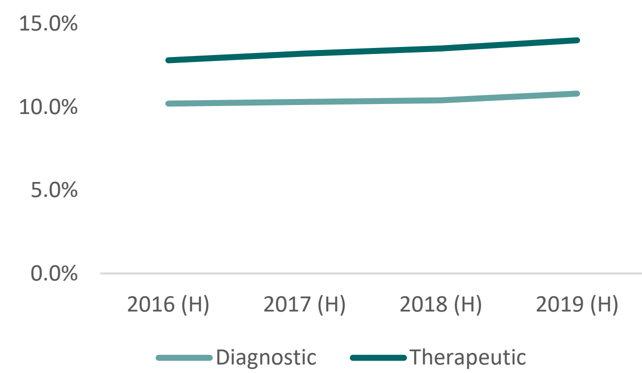
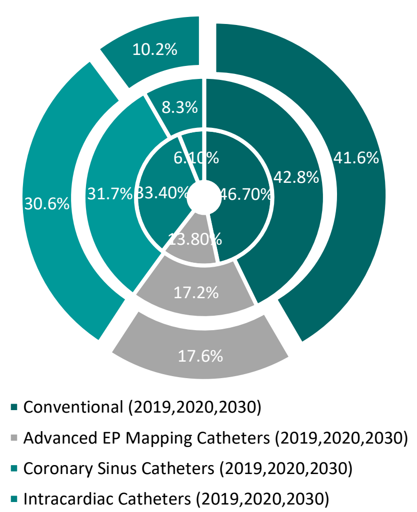


Figure 10: Global Atrial Fibrillation Devices Market Share, By Product type

Figure 11: Global Atrial Fibrillation Devices Market Y-o-Y 2016-2019

- The above figures highlight the Global Atrial Fibrillation Devices Market share by product type, 2020 and 2030. Therapeutic segment holds the major share throughout the market forecast.
- Figure 11 highlight the historical year on year growth for global atrial fibrillation devices market 2016 to 2019.

Global Atrial Fibrillation Devices Market by Product Type: Diagnostic Segment



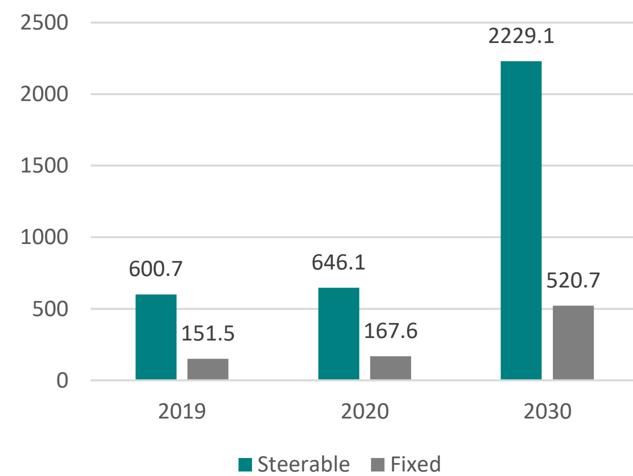


Figure 12: Global Atrial Fibrillation Devices Market, By Product Type

Figure 13: Global Atrial Fibrillation Devices Market, By Product Type

➢ The above figures highlight the % share of global atrial fibrillation devices market 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 then 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%.

Diagnostic	2015	2016	2017	2018	2019
Steerable Catheters	426.1	468.4	511.9	555.3	600.7
Fixed Catheters	100.7	110.8	122.5	136	151.5
Mapping Catheters	206.8	223.2	242.7	266	294.6
Coronary Sinus Catheters	336.6	376.3	422.3	476	538.2
Intracardiac Ultrasound Catheters	88.5	98.5	109.1	121.6	137.4
Total	1,158.60	1,277.30	1,408.50	1,554.90	1,722.40

Table 1: Global Atrial Fibrillation Devices Market, By Product Type, 2015-2019

Diagnostic	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	CAGR
Steerable Catheters	646.1	700.4	769.9	858.9	969.6	1,104.80	1,266.40	1,458.30	1,681.70	1,938.50	2,229.10	**13.2%**
Fixed Catheters	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	327.3	367.9	417.8	477.7	548.1	629	719	816.2	922.3	1,038.30	1,164.50	**13.5%**
Coronary Sinus Catheter	602.4	673	758.9	858.9	973.8	1,104.20	1,250.80	1,414.40	1,597.50	1,800.60	2,022.90	**12.9%**
Intracardiac Ultrasound Catheters	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	1,899.20	2,108.50	2,368.00	2,682.30	3,053.60	3,483.40	3,971.00	4,520.90	5,140.90	5,834.80	6,603.10	**13.3%**

Table 2: Global Atrial Fibrillation Devices Market, By Product Type, 2020-2030

Global Atrial Fibrillation Devices Market, By Product Type: Therapeutic Segment

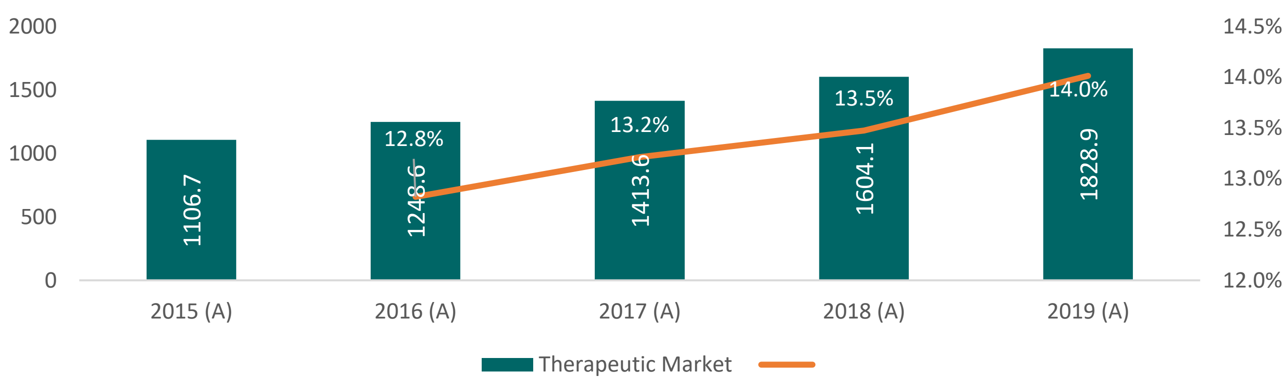


Figure 14: Atrial Fibrillation Devices Market, By Product Type, Therapeutic Segment Forecast, 2015-2019

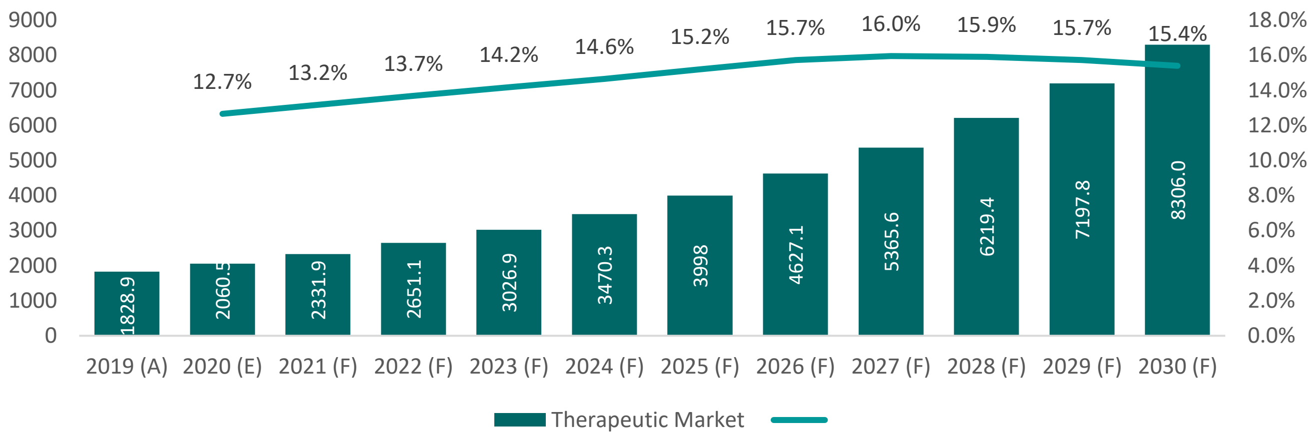


Figure15: Global Atrial Fibrillation Devices Market, By Product Type, Therapeutic Segment Forecast, 2019-2030

- 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.

Therapeutic	2015	2016	2017	2018	2019
EP Ablation Catheters	825.7	941	1,074.90	1,228.40	2,654.30
RF Ablation	288.6	332.4	383.1	440.3	911.4
Conventional RF Ablation Catheters	68.5	87.5	110	135.5	304.7
Irrigated RF Ablation Catheters	220.2	244.9	273.1	304.9	606.8
Cryoablation	530	601.1	683.7	779.4	1,728.80
Single-Electrode Cryoablation	71.3	83.2	97.1	113.1	245.2
Multi-Electrode Cryoablation	458.7	518	586.6	666.3	1,483.50
Epicardial Ablation	7	7.5	8.1	8.7	14.1
Maze Surgery	47.9	53.9	60.4	67.6	132.3
RF Ablation Clamps	20.3	22.8	25.6	29	57.8
Cryoprobes	27.6	31.1	34.8	38.6	74.5
LAA Management Devices	233.1	253.6	278.3	308.1	683.7
Total	**1,106.7**	**1,248.6**	**1,413.6**	**1,604.1**	**1,828.9**

Table 3: Global Atrial Fibrillation Devices Market Value, Therapeutic Segment, Product Type, 2015-2019

Therapeutic	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	CAGR
EP Ablation Catheters	1,588.6	1,796.8	2,038.4	2,321.0	2,654.3	3,054.5	3,539.2	4,118.4	4,794.9	5,576.6	6,468.0	**15.1%**
RF Ablation	568.0	637.9	717.3	807.3	911.4	1,034.4	1,181.2	1,357.2	1,565.3	1,806.6	2,078.8	**13.9%**
Conventional RF Ablation Catheters	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 Catheters	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	1,010.3	1,147.8	1,309.1	1,500.7	1,728.8	2,004.7	2,341.1	2,742.8	3,209.4	3,748.1	4,365.4	**15.8%**
Single-Electrode Cryoablation	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 Cryoablation	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 Ablation	10.3	11.1	12.0	13.0	14.1	15.3	16.8	18.4	20.1	21.9	23.9	**8.8%**
Maze Surgery	84.5	94.5	105.9	118.5	132.3	147.5	164.8	184.8	207.5	232.6	260.0	**11.9%**
RF Ablation Clamps	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	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	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	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%**

Table 4: Global Atrial Fibrillation Devices Market (US$ Mn) Value, Therapeutic Segment, Product Type, 2020-2030

- The Above tables highlight global atrial fibrillation devices market value analysis from 2015-2030
  - The EP ablation catheter segment is the most lucrative segment based on product type throughout the forecast period. This represents the CAGR of 15.1%
  - The Cryoablation Catheters are new technology that uses liquid nitrogen to freeze the tissue and ablate the site. This technology preferred more as it contains less pain then RF ablation. The segment is expected to grow US$ 1,010.3 Mn in 2020 to 4,365.4 Mn by 2030 end. This represents the CAGR of 15.8%

- LAA management Devices are more frequently used in patients with atrial fibrillation and this represents the CAGR of 15.1%

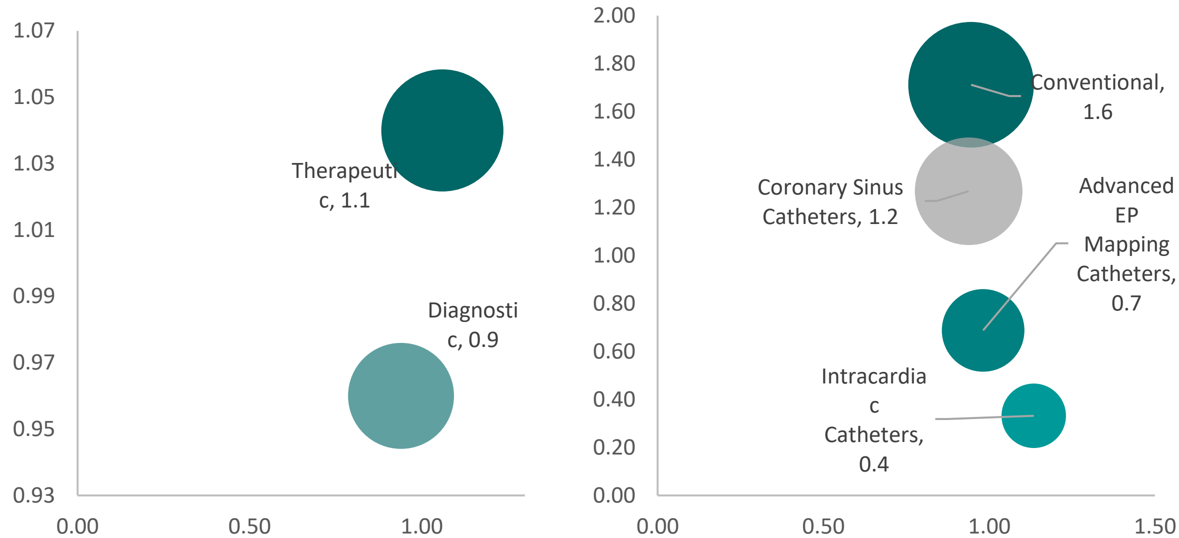


Figure 15: Global Atrial Fibrillation Devices Market Attractiveness Analysis, By Product Type

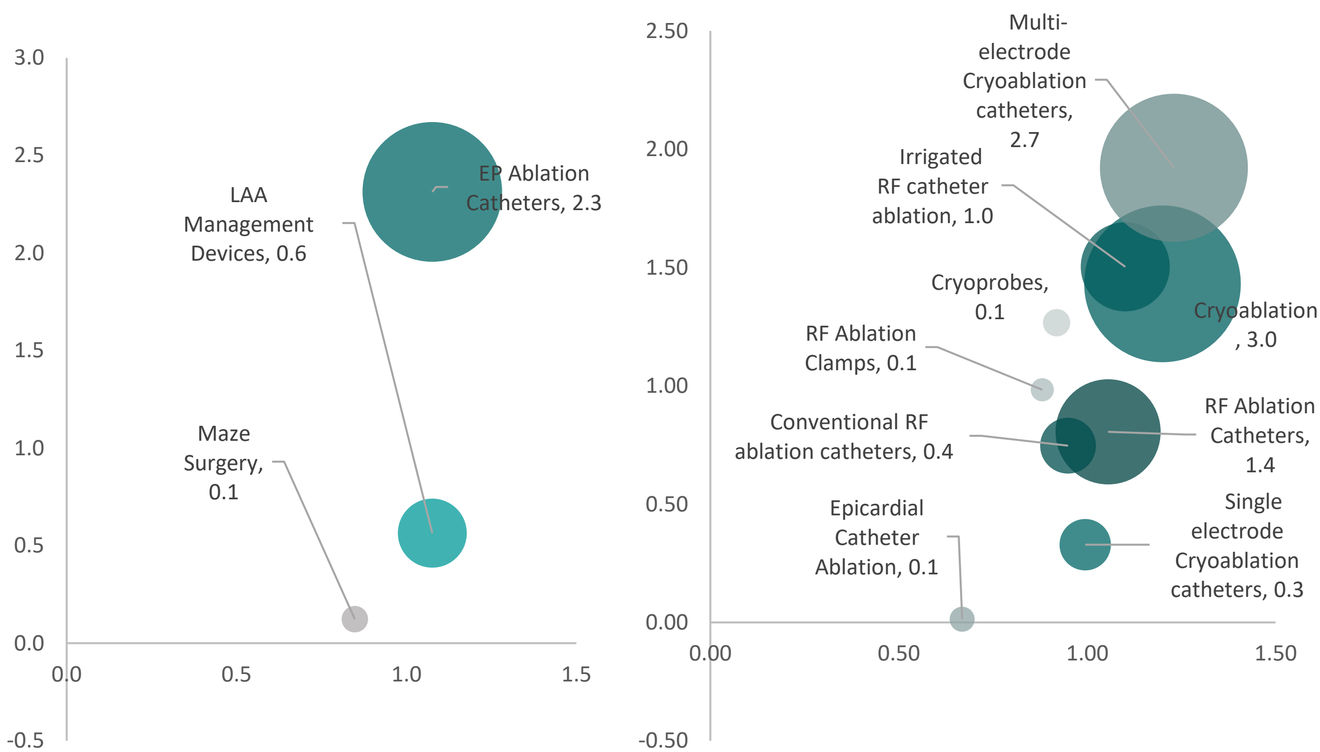


Figure 16: Global Atrial Fibrillation Devices Market Attractiveness, Therapeutic, By Product Type

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, Forecast 2020-2030, By Technology

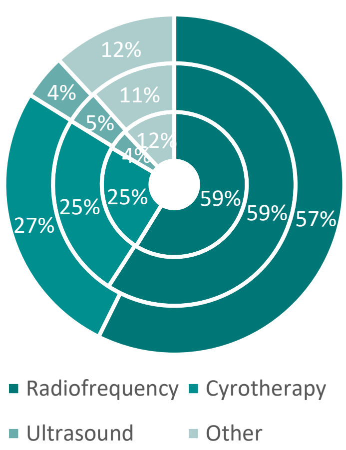


Figure 17: Global Atrial Fibrillation Devices Market % share, By Technology

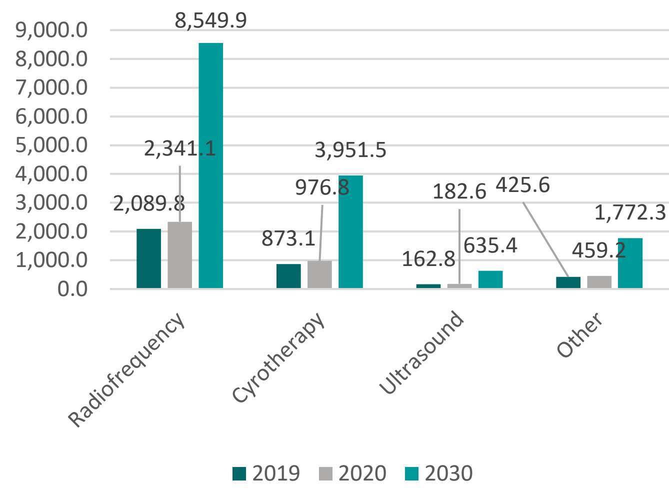


Figure 18: Global Atrial Fibrillation Devices Market value share, By Technology

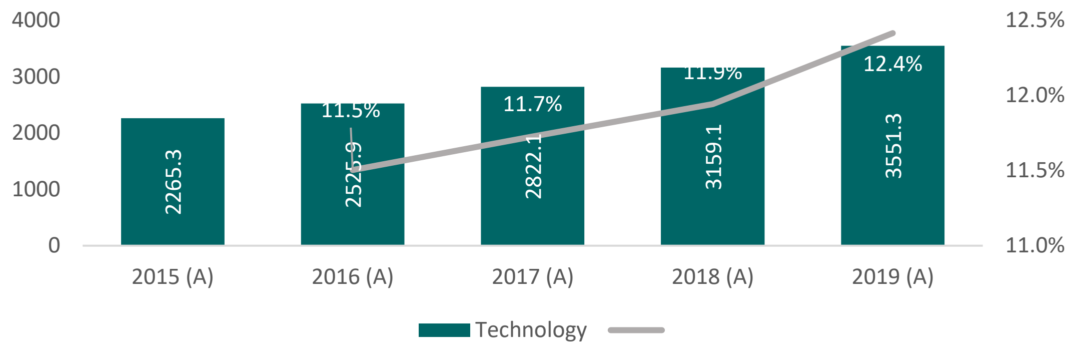


Figure 19: Global Atrial Fibrillation Devices Market, By Technology, 2015-2019

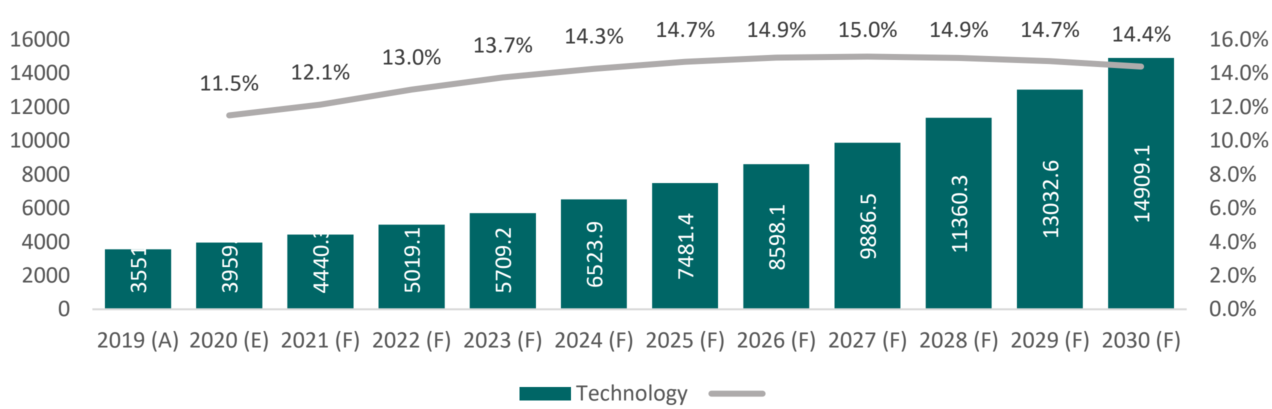


Figure 20: Global Atrial Fibrillation Devices Market, By Technology, 2020-2030

- The Above graphs highlights the global atrial fibrillation devices market by technology
    - By technology, radiofrequency holds the prominent share for global atrial fibrillation devices market throughout the market forecast. The radiofrequency catheters segment grow from 2,341.1 Mn in 2020 to 8,549.9 Mn by 2030 end. This represents the CAGR of 13.8% over the forecast period
    - Cryotherapy is the second most lucrative segment by technology and expected to grow at a CAGR of 15% during the market forecast
    - Ultrasound technology to ablate the arrhythmia is still in the emerging phase but this represent the healthy growth and represents the CAGR of 13.3 over the market forecast

- Other segments such as Focal Impulse Rotor Modulation (FIRM), laser, and endocardial ablation grows USD$ 459.2 Mn in 2020 and is anticipated to grow at a CAGR of 14.5 % by the end of 2030

Technology	2015	2016	2017	2018	2019
Radiofrequency	1,320.90	1,465.80	1,640.10	1,845.20	2,089.80
Cryotherapy	536.9	608	686.3	773.7	873.1
Ultrasounds	94.7	109.9	126.4	144	162.8
Others	312.9	342.1	369.3	396.2	425.6
Total	**2,265.30**	**2,525.90**	**2,822.10**	**3,159.10**	**3,551.3**

Table 5: Global Atrial Fibrillation Devices Market (US$ Mn) Value, By Technology, 2015-2019

Technology	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	CAGR
Radiofrequency	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	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	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	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	**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%**

Table 6: Global Atrial Fibrillation Devices Market (US$ Mn) Value, By Technology, 2020-2030

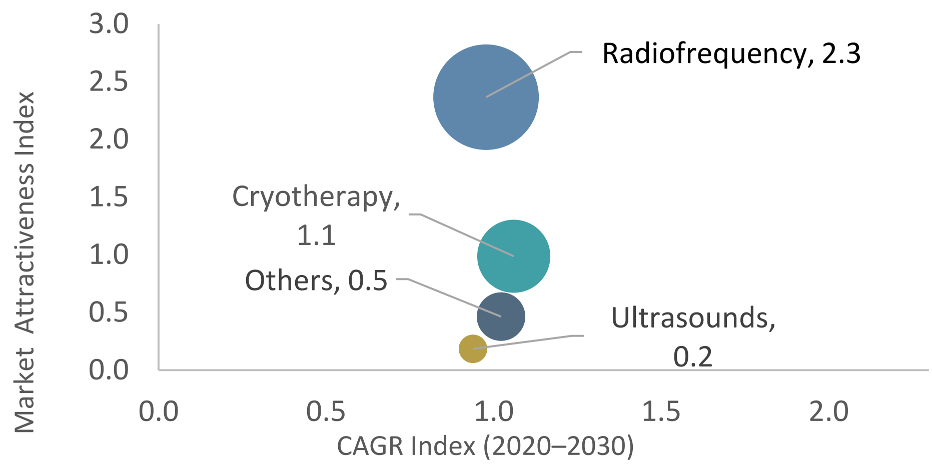


Figure 21: Global Atrial Fibrillation Devices Market Attractiveness Analysis, By End User, 2020-2030

- 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

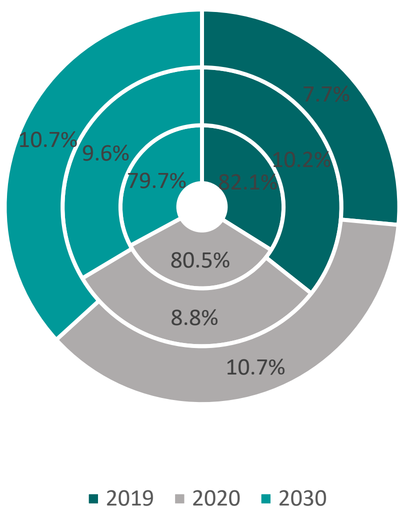


Figure 22: Global Atrial Fibrillation Device Market % Share, By End User

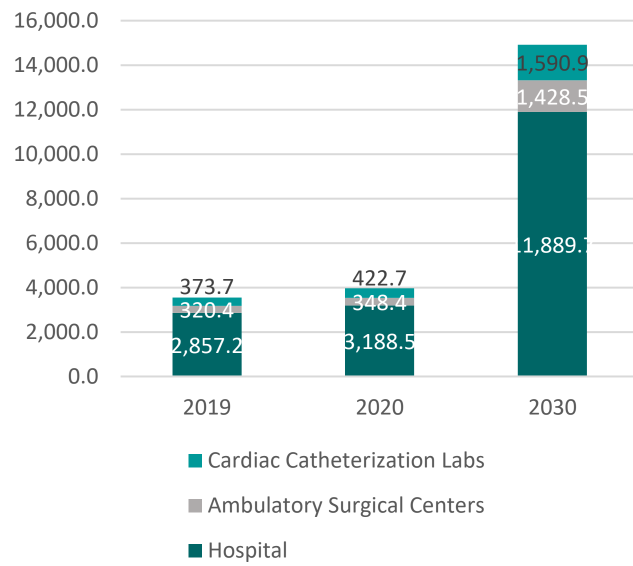


Figure 23: Global Atrial Fibrillation Devices Market Value, 2019-2020, 2030

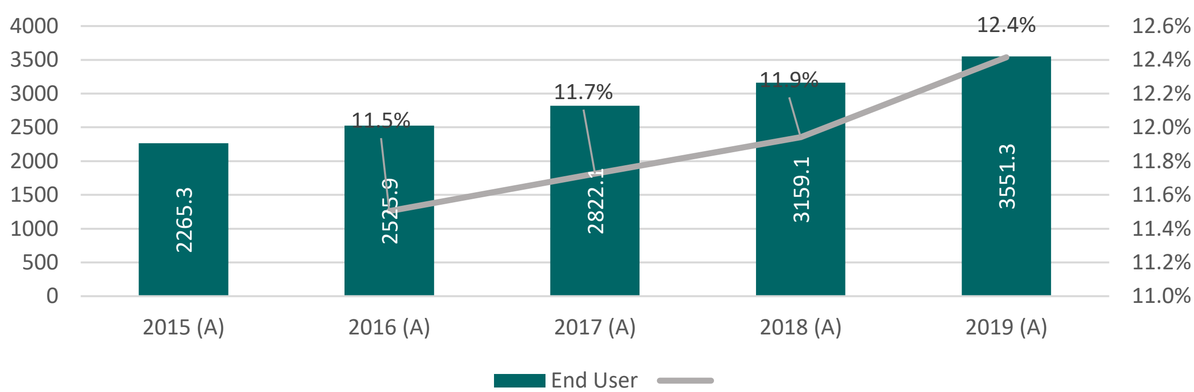


Figure 24: Global Atrial Fibrillation Devices Market Value, By End User, 2015-2019

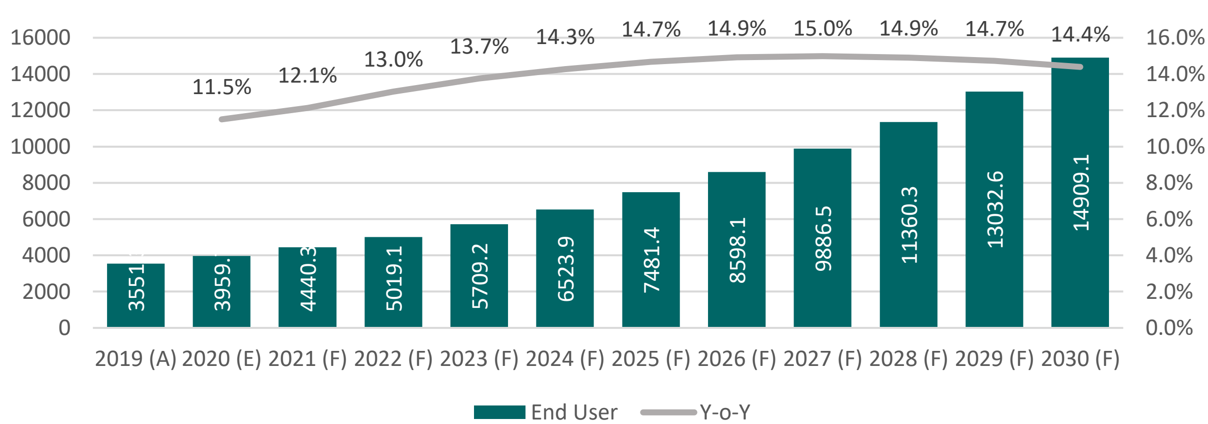


Figure 25: Global Atrial Fibrillation Devices Market Forecast, By End User, 2019-2030

- The above figures highlights the global atrial fibrillation devices market, by end user, 2015-2019 and forecast 2020-2030
    - Hospital is the leading segment for global atrial fibrillation devices market by end user in terms of revenue in 2019 which is US$ 2,857.2 Mn and grow at US$ 11,889.7 Mn during the forecast period. This represents the CAGR of 14.1%

End User	2015	2016	2017	2018	2019
Hospitals	1,849.00	2,047.60	2,274.80	2,539.60	2,857.20
Ambulatory Surgical Centers	200.2	230.2	260.2	289.9	320.4
Cardiac Catheterization Laboratories	216.1	248.1	287.2	329.6	373.7
Total	**2,265.30**	**2,525.90**	**2,822.10**	**3,159.10**	**3,551.30**

Table 7 : Global Atrial Fibrillation Devices Market (US$ Mn) Value, By End User, 2015-2019

End User	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	CAGR
Hospitals	3,188.50	3,587.30	4,075.30	4,661.20	5,350.40	6,143.40	7,051.60	8,076.80	9,227.30	10,494.00	11,889.70	**13.8%**
Ambulatory Surgical Centres	348.4	381.3	423.4	477.9	546.4	631.3	736.3	867.6	1,026.00	1,212.20	1,428.50	**15.0%**
Cardiac Catheterization Laboratories	422.7	471.8	520.3	570.1	627.1	706.7	810.1	942.1	1,106.90	1,326.40	1,590.90	**13.3%**
Total	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%**

Table 8: Global Atrial Fibrillation Devices Market (US$ Mn) Value, By End User, Forecast 2020-2030

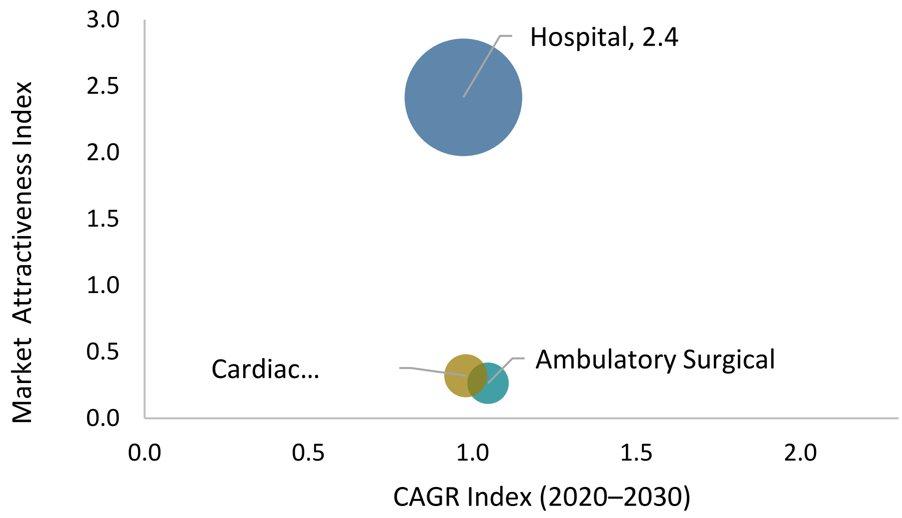
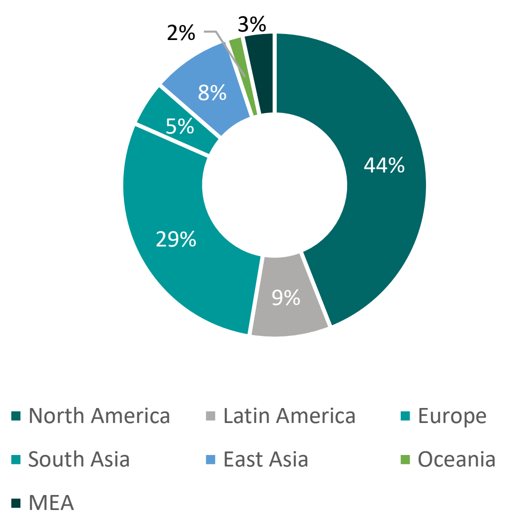


Figure 26: Global Atrial Fibrillation Devices Market Attractiveness Analysis by End User, 2020-2030

➢ 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 Region



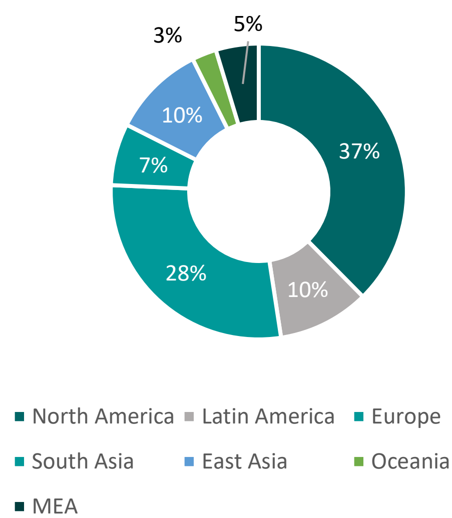
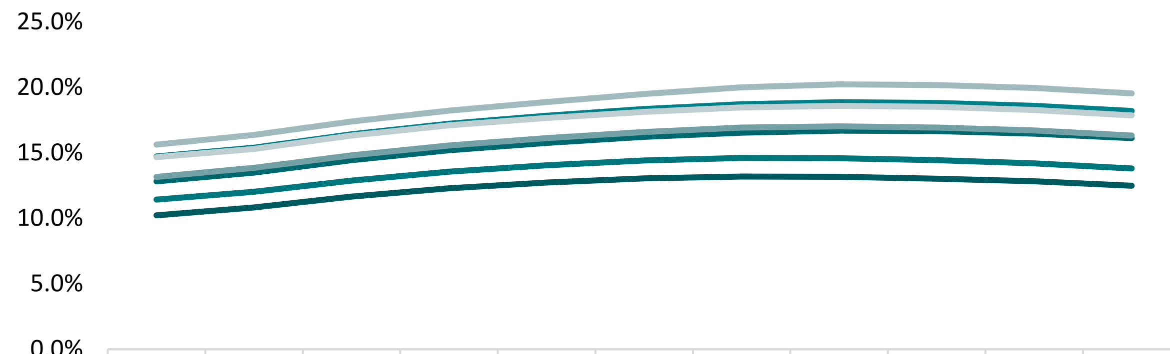


Figure 27: Global Atrial Fibrillation Devices Market Share, By Region, 2019

Figure 28: Global Atrial Fibrillation Devices Market Share, By Region, 2030



	2020 (E)	2021 (F)	2022 (F)	2023 (F)	2024 (F)	2025 (F)	2026 (F)	2027 (F)	2028 (F)	2029 (F)	2030 (F)
North America	10.2%	10.8%	11.6%	12.3%	12.7%	13.0%	13.2%	13.2%	13.0%	12.8%	12.5%
Latin America	12.8%	13.5%	14.4%	15.2%	15.7%	16.2%	16.5%	16.7%	16.6%	16.5%	16.1%
Europe	11.4%	12.0%	12.9%	13.6%	14.1%	14.4%	14.6%	14.6%	14.4%	14.2%	13.8%
East Asia	14.7%	15.4%	16.4%	17.2%	17.8%	18.3%	18.7%	18.9%	18.8%	18.6%	18.2%
South Asia	13.2%	13.8%	14.8%	15.6%	16.1%	16.6%	16.9%	17.0%	16.9%	16.7%	16.3%
Oceania	15.6%	16.4%	17.4%	18.2%	18.9%	19.5%	20.0%	20.2%	20.2%	20.0%	19.5%
MEA	14.7%	15.3%	16.3%	17.1%	17.7%	18.1%	18.5%	18.6%	18.5%	18.3%	17.8%

Figure 29: Global Atrial Fibrillation Devices Market Y-o-Y Analysis (%), By Region, 2020-2030

- The above figures highlights 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 increase prevalence cases and continuous technological advancements.
  - The North America atrial fibrillation devices market grow 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

Region	2015	2016	2017	2018	2019
North America	1,054.10	1,160.10	1,278.60	1,411.30	1,563.70
Latin America	183.7	208.1	236.1	268.4	306.3
Europe	655.5	731.4	817.4	914.9	1,027.60
South Asia	94.1	108.7	125.9	146.2	170.6
East Asia	179.2	203.4	231.4	263.9	302.2
Oceania	32.3	37.5	43.8	51.3	60.5
MEA	66.4	76.7	88.9	103.2	120.3
Total	**2,265.30**	**2,525.90**	**2,822.10**	**3,159.10**	**3,551.30**

Table 9: Global Atrial Fibrillation Devices Market (US$ Mn) Value, 2015-2019

Year	2016	2017	2018	2019
Country	11.50%	11.70%	11.90%	12.40%
North America	10.10%	10.20%	10.40%	10.80%
Latin America	13.30%	13.50%	13.70%	14.10%
Europe	11.60%	11.80%	11.90%	12.30%
South Asia	15.50%	15.80%	16.10%	16.70%
East Asia	13.50%	13.80%	14.00%	14.50%
Oceania	16.30%	16.80%	17.20%	17.90%

Table 10: Global Atrial Fibrillation Devices Market, Y-o-Y, By Region, 2016-2019

Region	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	CAGR
North America	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	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	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%**
South Asia	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%**
East Asia	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	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	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	**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%**

Table 11: Global Atrial Fibrillation Devices Market (US$ Mn) Value, Forecast 2020-2030

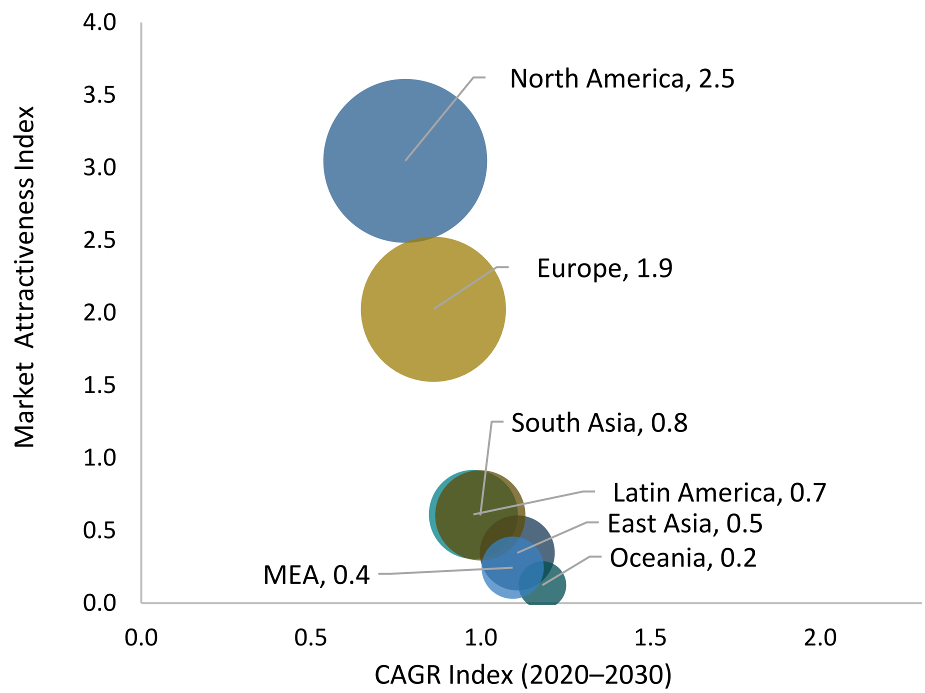
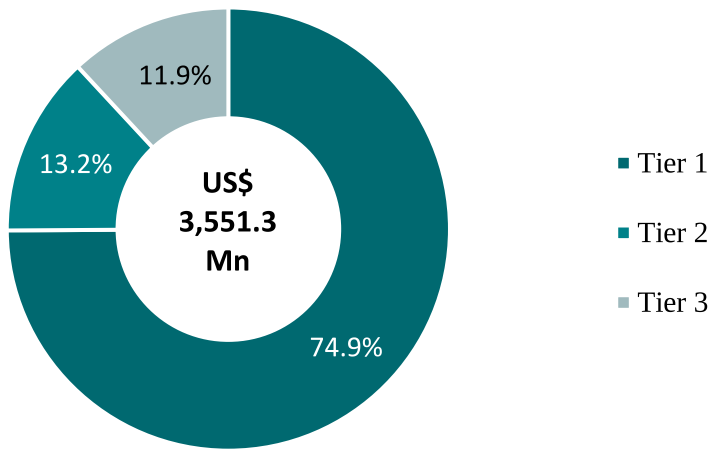


Figure 30 : Global Atrial Fibrillation Devices Market Attractiveness Analysis by Region, 2020-2030

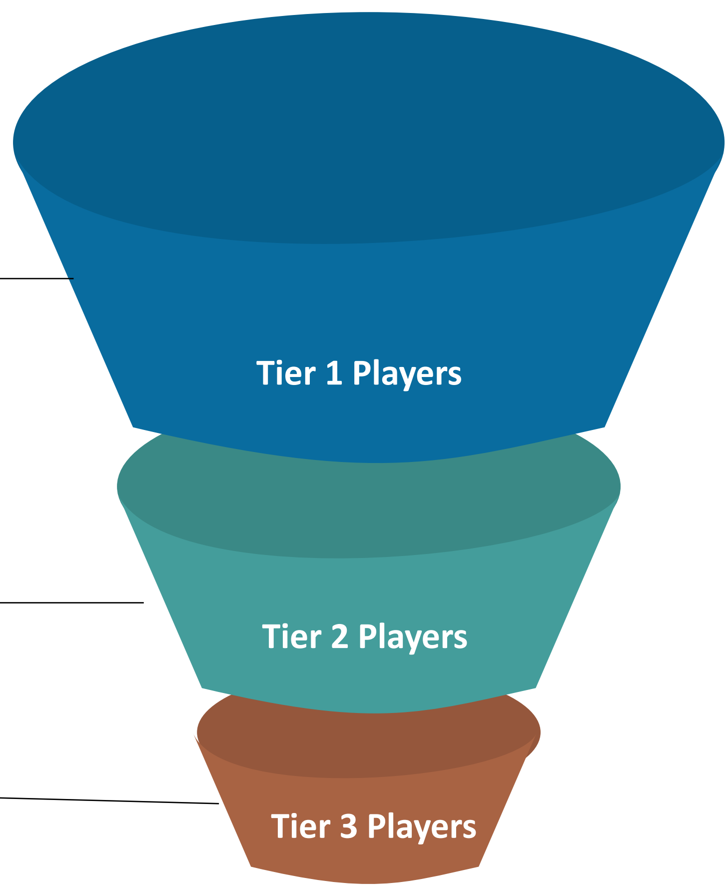
- Figure highlights market attractiveness analysis for global Atrial Fibrillation Devices market by country over 2020-2030
  - North America dominated global Atrial Fibrillation Devices market in terms of revenue in 2020, with attractiveness index of 2.5 over the forecast period
    - Revenue from North 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

Atrial Fibrillation Devices Market: Competitive Landscape:

Global Atrial Fibrillation Devices Market – Tier Structure Analysis



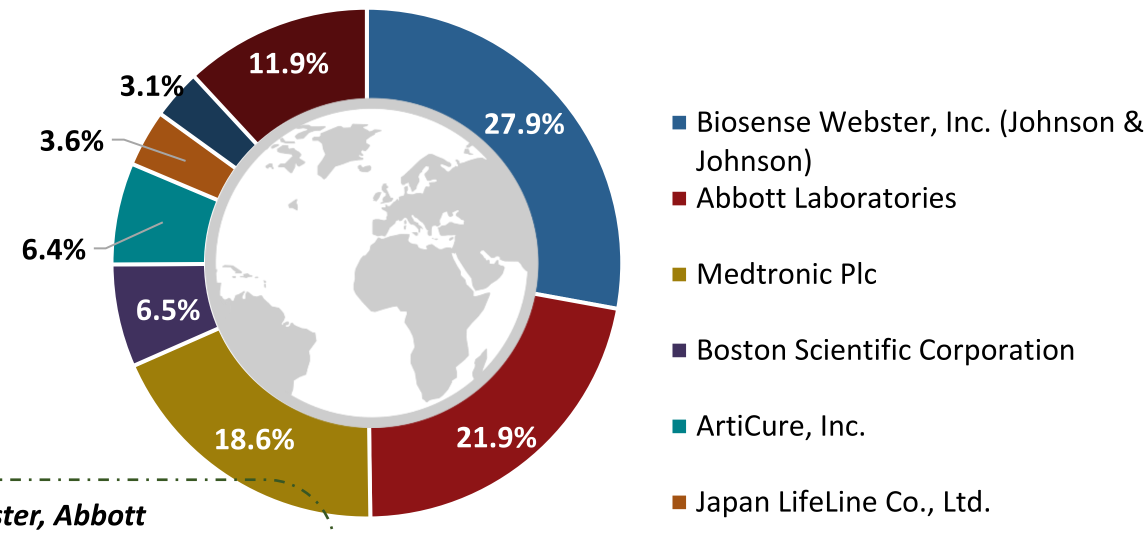
- Biosense Webster, Inc.
- Abbott Laboratories
- Medtronic Plc
- Boston Scientific Corporation



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

- 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.

Global Atrial Fibrillation Devices Market Value 2019

US$ 3,551.3 Mn

The Major Companies in the atrial fibrillation device segment was calculated by taking the market revenue of the companies from their quarterly and annual reports

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

Company Key Insights

- Biosense Webster, Inc., is the Market leader in terms of revenue for atrial fibrillation devices market and holds wide range of product for atrial fibrillation. Biosense Webster is a part of Johnson & Johnson companies with an annual revenue of US$ 82,059 Mn 2019. With 132,200 number of employees the company withstanding its operational functions and productivity. It provides a wide range of access devices, ablation, mapping, and diagnostic catheters for electrophysiology. Being a part of a giant parent company, it has a strong market presence. In the medical devices sector, Biosense Webster is continuously improving cadence of innovation and disciplined portfolio management. The electrophysiology business of the company is majorly driven by atrial fibrillation procedure growth and with strong THERMOCOOL SMARTTOUCH® SF Contact Force Sensing Catheter and diagnostic catheter sales.
- Abbot Laboratories is the second market leader for atrial fibrillation devices market. The company is headquarters in United States and holds the total revenue of US$ 31,904 Mn. The company provides wide range of diagnostic and medical test products. The company have strong product line and believes in network marketing for distribution of its product. The company basically focuses on mergers and acquisitions to expands its business and increase its product portfolio. For Instance, January 2017, Abbott Laboratories acquired St. Jude Medical a privately held atrial fibrillation devices and cardiac rhythm management developer to increase its cardiology product portfolio.
- Medtronic Plc, is the global Medical device Company which provide cardiac rhythm management and electrophysiology devices. The company operates in 4 major business segment that includes cardiac & vascular management, minimally invasive therapy segment, restorative therapy, diabetes care. The company have around 90,000 employees that generates US$ 30,557 Mn revenue. The company revenue is majorly driven by its cardiology portfolio. The company involves in acquisition strategies to expand its business footprint across the globe. For Instance, in July 2015, Medtronic plc acquired CardioInsight Technologies Inc., a Cleveland-based medical device company to increase its atrial fibrillation product segment.

Global Atrial Fibrillation Devices Market Value 2019

US$ 3,551.3 Mn

Products Offered By Key Market Players

The Products offered by some of them and other companies in the device segment are given below:

Sr. No.	Company	Brand	Type of Product	Description
1	Biosense Webster, Inc.	THERMOCOOL SMARTTOUCH® SF Catheter	Ablation Catheter	Contact Force Ablation Catheter, Sensor Enabled
2	Biosense Webster, Inc.	SOUNDSTAR® 3D eco Catheter	ICE Catheter	Ultrasound Catheter, Tip to Tissue Contact, Full Mapping Integration
3	Biosense Webster, Inc.	WEBSTER® CS Catheter	Diagnostic Catheter	One-to-One Torqueablity, One Handed Technique
4	Biosense Webster, Inc.	LASSO® Mapping Catheter	Mapping Catheter	Grid Mapping Catheter, Deflectable, Nitinol Loop Design
5	Abbott Laboratories	TactiCath	Ablation Catheter	Contact Force Ablation Catheter, Sensor Enabled
6	Abbott Laboratories	Advisor	Diagnostic Catheter	FL Circular Mapping Catheter, Sensor Enabled

Sr. No.	Company	Brand	Type of Product	Description
7	Abbott Laboratories	TactiCath	Ablation Catheter	Quartz Contact Force Ablation Catheter
8	Abbott Laboratories	Advisor	Diagnostic Catheter	Grid Mapping Catheter, Sensor Enabled
9	Abbott Laboratories	Amplatzer Amulated LAA Closure Devices	LAA Closure	LAA Management, Reduce Risk of Temponade and Stroke, Easy to Handle
10	Medtronic Plc	Arctic Front Advance™	Cryoablation Catheter	Balloon for Pulmonary Vein Isolation, Improves Contact and Stability
11	Medtronic Plc	RF Marinr Multi-curve (Mc) Steerable Catheter	RF Ablation Catheter	Multi-Curve, Incremental Lateral Deflection
12	Medtronic Plc	Achieve Advance Mapping Catheter	Mapping Catheter	Assessment for Pulmonary Vein Isolation, Mapping PV-Potential
13	Medtronic Plc	Soloist Intracardiac Electrode Catheter	Diagnostic Catheter	Provide Greater View of Anatomy
14	Boston Scientific Corporation	BLAZER™ II Temperature	Ablation Catheter	Long Tip, Bi-Directional Block, Shorter Procedure Time
15	Boston Scientific Corporation	VIKING™	Diagnostic Catheter	Less Repositioning, Minimize Endocardial Bounce
16	Boston Scientific Corporation	ULTRA ICE™	ICE Catheter	Better Anatomy, Complete Visualization, Radiopaque
17	Boston Scientific Corporation	WATCHMAN™	LAA Management	Preloaded in Delivery System, Different Sizes, Repositionable &and Recapturable
18	ArtiCure, Inc.	Isolator Synergy Clamps	Ablation Clamps	Unique Lesion Formation, Efficient Energy Delivery, Consistent Tissue Compression

Sr. No.	Company	Brand	Type of Product	Description
19	**ArtiCure, Inc.**	cryoICE Cryoablation Probes	Cryoablation Probe	Retractable Handle, Active Defrost
20	ArtiCure, Inc.	AtriClip FLEX•V Device	LAA Management	Malleable Shafts, Clip Deployment Trigger
21	ArtiCure, Inc.	EPi-Sense Coagulation Device	Epicardial Ablation	Sensing and Recording Cardiac Signal
22	Japan Lifeline Co.	-	Electrophysiological Catheters	Provides Specific Information on Intercardiac Stimulus Conductivity Pathways, Indicates Irregular Pulse Origin Areas.
23	Japan Lifeline Co.	-	Ablation Catheter	Attached Electrodes, Correct Stimulus Conductivity Pathways
24	Japan Lifeline Co.	-	Irrigated Tip Ablation Catheter	Emit Saline at the Tip of the Catheter, Enables Cauterizing while Cooling the Tip of the Electrode.
25	Japan Lifeline Co.	-	Diagnostic Catheter	3 Curve Options with Different Shapes, Flexibilities, and Reaches.
26	Japan Lifeline Co.	-	Diagnostic Catheter	Multi-curve Technology Provides Variable Curve Sizes and Reach in one Catheter.
18	27	Biotronik SE & Co. KG	AlCath Gold FullCircle	Ablation Catheter

Sr. No.	**Company**	**Brand**	**Type of Product**	**Description**
10	Medtronic Plc	Arctic Front Advance™	Cryoablation Catheter	Balloon for Pulmonary Vein Isolation, Improves Contact and Stability
11	Medtronic Plc	RF Marinr Multi-curve (Mc) Steerable Catheter	RF Ablation Catheter	Multi-Curve, Incremental Lateral Deflection
12	Medtronic Plc	Achieve Advance Mapping Catheter	Mapping Catheter	Assessment for Pulmonary Vein Isolation, Mapping PV-Potential

13	Medtronic Plc	Soloist Intracardiac Electrode Catheter	Diagnostic Catheter	Provide Greater View of Anatomy
14	Boston Scientific Corporation	BLAZER™ II Temperature	Ablation Catheter	Long Tip, Bi-Directional Block, Shorter Procedure Time
15	Boston Scientific Corporation	VIKING™	Diagnostic Catheter	Less Repositioning, Minimize Endocardial Bounce
16	Boston Scientific Corporation	ULTRA ICE™	ICE Catheter	Better Anatomy, Complete Visualization, Radiopaque
17	Boston Scientific Corporation	WATCHMAN™	LAA Management	Preloaded in Delivery System, Different Sizes, Repositionable &and Recapturable
18	ArtiCure, Inc.	Isolator Synergy Clamps	Ablation Clamps	Unique Lesion Formation, Efficient Energy Delivery, Consistent Tissue Compression

Sr. No.	Company	Brand	Type of Product	Description
19	27	Biotronik SE & Co. KG	AlCath Gold FullCircle	Ablation Catheter
20	28	Biotronik SE & Co. KG	AlCath Flutter Gold	Ablation Catheter
21	29	Biotronik SE & Co. KG	AlCath Flux eXtra Gold	Ablation Catheter
22	30	Biotronik SE & Co. KG	MultiCath	Diagnostic Catheter
23	31	Biotronik SE & Co. KG	ViaCath	Diagnostic Catheter
24	32	Biotronik SE & Co. KG	Woxx	Diagnostic Catheter
25	33	Biotronik SE & Co. KG	HeartSpan	Transseptal access device

26	Japan Lifeline Co.	-	Diagnostic Catheter	Multi-curve Technology Provides Variable Curve Sizes and Reach in one Catheter.
18	27	Biotronik SE & Co. KG	AlCath Gold FullCircle	Ablation Catheter

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. The Atrial fibrillation devices are regulated by different regional regulatory bodies and guided by US FDA. U.S. represents the most lucrative region for atrial fibrillation devices, followed by Europe and others which are estimated to witness a significant rise in adoption of minimally invasive treatment for atrial fibrillation. 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

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 atrial fibrillation devices and electrophysiology globally. 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

Several factors such as rising prevalence of atrial fibrillation, ongoing technological advancements, favourable 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.

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Found in 2011, Future Market Insights (FMI) emerged as a separate legal entity with the onus on tapping emerging markets with aptly tailored intelligence. The company provides syndicated and client reports on market intelligence. The company has also awarded with the title of 'Brand of the Year' in market research. The aim is to grow as a value-driven market research & consulting firm, aiding global leading businesses materialize their objectives. We are constantly evolving with the focus on helping our clients pick up pace in achieving their most-critical goals with smooth execution