

Pacemakers Market Assessment, By Implantability [Implantable, External], By Technology [Single Chamber Pacemaker, Dual Chamber Pacemaker, Biventricular/CRT Pacemaker], By Type [Conventional, MRI Compatible], By Indication [Arrhythmias, Congestive Heart Failure, Others], By End-user [Hospitals and Cardiac Centers, Ambulatory Surgical Centers], By Region, Opportunities and Forecast, 2017-2031F

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Report description:

Global pacemaker market is projected to witness a CAGR of 4.05% during the forecast period 2024-2031, growing from USD 5.06 billion in 2023 to USD 6.95 billion in 2031. The market for cardiac pacemakers is driven by growing cardiovascular diseases (CVD), novel drug entry into the market, and regulatory approvals for innovative products. The growth of this market is expected to be at a higher rate while the major market is served by the top 5 market players.

Pacemakers are the medical devices placed in the human heart to facilitate the cardiac rhythm in arrhythmic patients. The demand for pacemakers is rising significantly and with the growing CVD burden, it is anticipated to grow further in the future. Technological advances aim to improve patient compliance through design optimization and reducing the size of such devices further enhance the growth rate of the market. However, despite the presence of several driving forces, the market faces challenges like the high cost associated with the device and the procedure to implant it, along with the battery life issue being faced by patients with such implants. Furthermore, frequent regulatory approvals and strategic product launches keep the market active and help with further expansion. In July 2023, BIOTRONIK SE & Co KG announced the receipt of USFDA approval for its portfolio of Amvia Edge pacemakers and cardiac resynchronization therapy pacemakers (CRT-P), which highlights BIOTRONIK's latest innovation in cardiac rhythm management. Amvia Edge is the smallest single-chamber MR conditional pacemaker in the

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market and introduces a unique set of patient-centric clinical solutions coupled with automated workflow efficiency.

Growing Prevalence of CVD Boosts the Demand for Pacemakers

Demand for pacemakers is increasing due to the high prevalence of CVD. One very important cause for this increasing incidence is the aging population, characterized primarily by a sedentary lifestyle and poor diet. With new technology applied, the development of the pacemaker has heightened, and it is more appealing to patients as well as healthcare providers. As the awareness of CVD and its risks grows across the world, with better healthcare access, the market of pacemakers will continue to grow. It reflects the pressing need for innovative solutions in cardiovascular care with a focus on improvement in patient outcomes and quality of life. For instance, according to an article published in the European Heart Journal in November 2023, from 2010 to 2021, almost 114 thousand pacemakers were implanted. The corresponding statistics for single-chamber, double-chamber, and biventricular types make up 27.9%, 67.4%, and 4.6%, respectively. More men get a pacemaker implanted in them than women-more men get a pacemaker, as the distributions show (56.9% of men vs 43.1% were women). This trend is increasing every year. While 55.3% of the men were registered in 2010, in 2021, it will be 57.8%. The average age at the time of first pacemaker implantation is 76 years (75 years for men, 77 years for women). The average age at primary implantation increased by 1 year from 2010 to 2021 from 75.3 years to 76.3 years.

Emphasis on Reducing Size of Pacemakers Drives the Market

One major problem with pacemakers is their design and size, along with the set of mandatory precautions they come with. To overcome such challenges, several market players and researchers have come up with novel designs and initiatives to reduce its size to enhance patient compliance. Miniaturization decreases the level of discomfort patients experience since it will reduce the invasiveness and even the time taken to recover after implantation. Devices of even smaller sizes would improve aesthetic acceptance because they can be hardly observable under the skin. Technological advancement offers a provision for extra functionalities in compact configurations like remote monitoring and efficiency in battery use. Therefore, with this aspect of consideration, demand for small pacemakers would rise. For instance, in January 2024, Medtronic plc announced the receipt of the CE (Conformite Europeenne) Mark for its Micra AV2 and Micra VR2 pacemakers. These are the next generation of Medtronic's industry-leading miniature, leadless pacemakers. The Micra AV2 and Micra VR2 are the world's smallest pacemakers. They offer longer battery life and easier programming compared to previous Micra pacemakers, while still providing the many benefits of leadless pacing, such as reduced complications compared to traditional pacemakers. With approximately 40% more battery life compared to previous generations, Medtronic estimates that the battery life of the Micra AV2 and Micra VR2 is nearly 16 and 17 years, respectively.

Dominance of Arrhythmia Indication in Pacemaker Market

The Arrhythmia indication segment is anticipated to dominate the pacemaker market owing to the high prevalence of arrhythmia worldwide coupled with the high efficacy of pacemakers to correct the heart rhythm. These conditions are increasingly common due to factors like aging populations, sedentary lifestyles, and rising rates of chronic diseases. Pacemakers play a crucial role in managing these arrhythmias by ensuring the heart maintains a regular rhythm, which is essential for effective blood circulation. For instance, an article published in The Lancet Journal in February 2024 reported that Atrial fibrillation (AF) is the most common cardiac arrhythmia, with approximately 1.5-2% prevalence among adults in Europe, with expected further increase to 9.5% in individuals above 65 years by 2060. AF is also a significant threat since it is one of the major causes of stroke, dementia, heart failure, and premature death, which is all relevant to the growing elderly population, as well as healthcare systems.

North America Dominates the Pacemaker Market

North America is anticipated to be the leading region with the highest market share in the pacemaker market. The high incidence of cardiovascular diseases in the region leads to more demand for cardiac devices. Moreover, the prevalence of heart rhythm disorders among an aging population, along with escalating rates of obesity and sedentary lifestyles, is also the major cause. With advanced health infrastructure and high expenditure on healthcare, it is easier for patients in the United States and Canada to access advanced medical technology, such as pacemakers. Proper support from regulatory mechanisms and a strong network of care providers promote access to the necessary medical assistance as soon as possible for patients. Furthermore, the increased awareness among the public about the importance of heart care and preventive measures strengthens the growth of the pacemaker market in North America. For instance, according to The University of Texas Southwestern Medical Center, approximately 3 million people in the United States live with a pacemaker, which is a battery-powered device implanted in the

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chest to help maintain the proper heartbeat rate. Every year, around 200,000 of these devices are implanted in the United States for patients who have bradycardia or abnormal heart rhythms.

Future Market Scenario (2024-2031F)

Leadless pacemakers are the latest inventions that are revolutionizing the pacemaker market, creating futuristic developments through a few key innovations. The burden of traditional leads that connect the device to the heart has been abolished in leadless pacemakers, thereby giving way to some greatly valued benefits, including reduced risk of complications and improved patient comfort. It also simplifies the implantation procedure, hence having a potential and faster recovery time with lower chances of infection. In addition, leadless technology opens the possibilities for more advanced functionalities like remote monitoring as well as advanced diagnostics, through which healthcare providers can treat their patients better. For instance, in July 2024, Abbott announced that the USFDA approved its AVEIR dual chamber (DR) leadless pacemaker system, which is the world's first dual chamber leadless pacing system that can be used to treat patients with arrhythmia. The approval significantly increases access to leadless pacing for millions of people across the United States, as more than 80% of those in need of a pacemaker require pacing in both the right atrium and right ventricle of the heart.

Key Players Landscape and Outlook

The pacemaker market is quite consolidated with a very limited number of market players and a major market being sabotaged by Medtronic plc. The market players in this segment are consistently innovating technology to create more advanced pacemakers to improve patient compliance. The market has seen regulatory approvals and some deals for market growth, however, the most notable acquisition dates back to the year 2017, when Abbott Laboratories acquired St. Jude Medical to enhance its market share in the pacemaker market.

In June 2024, Boston Scientific Corporation, a leading manufacturer of pacemakers, announced a definitive agreement to acquire Silk Road Medical, Inc., a medical device company that has developed an innovative platform of products to prevent stroke in patients with carotid artery disease through a minimally invasive procedure called transcatheter aortic valve replacement (TAVR). The acquisition is worth approximately USD 1.16 billion.

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