Singapore Pumps Innovation into the Heart of Asia's Growing Cardio Device Industry

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In the time it takes to read this piece, 30 Chinese men and women will die from heart disease. This staggering statistic means that as Asia continues to witness astonishing growth and development, Asians will increasingly wrestle with the disease. Heart disease is already the number one killer in China and India, and is fast on the rise throughout Southeast Asia, where the World Health Organization reports that cardiovascular diseases accounts for 27% of all deaths.

A variety of factors account for the rise of heart disease in the region: for example, as Asia continues to urbanize and develop economically, Western-influenced diets and work habits become the norm. As young men and women trade manual labor for desk jobs, they become less physically active and therefore, more susceptible to cardiovascular problems.

In response to these health trends, demand for affordable medical devices—and cardiac devices in particular—is exploding in Asia. According to consulting firm Pacific Bridge Medical [1], Asia's share of the global cardiac device market is expected to grow from a current 29% to 38%. This growth is especially noteworthy in China and India. According to business advisory firm WTP Advisors [2], China's medical device market is expected to expand about 15% annually over the next five years, while India's market is estimated to expand about 23%.

Many of the world's top medical technology firms—both Asian and Western—are working to meet the healthcare needs in Asia. Whereas a decade ago, virtually all cardiac devices used in patients in the region were made in the U.S. and imported, medical technology companies are increasingly focused on meeting Asian demand from Asia. Besides physiological differences among a diverse Asian population, companies will also have to grapple with the complex regulatory environment, which differs from country to country. Differences in the level of training that physicians in Asia receive mean that cardiac devices made for the Asian market will need to be simpler and easy-to-use with minimal training. All this underscores the need for Western medical technology companies to innovate in Asia for Asia.

Singapore was an early entrant into the cardiac design market and is increasingly turning its sights on innovating for the Asian market. Earlier this year, Texas-based medical device manufacturer Greatbatch [3] announced a new R&D center in Singapore aimed at designing active implantable medical devices for the cardiovascular and neuromodulation segments. It is the first Asian venture by Greatbatch and the first R&D center for active implantable medical device in Asia.

Beyond R&D, companies, such as Medtronic [4], which opened a $56 million (U.S.) manufacturing facility in Singapore last year, plan to expand their production. By 2017, Medtronic will be producing 50% of its pacemakers from its facility in Singapore, many of which will be used to satisfy Asian demand. Likewise, Singapore will become Edwards' [5] largest production site for heart valve manufacture. Edwards currently has 38% of global market share for the production of transcatheter heart valves.

Recognizing that talent is a critical factor of success for medical technology innovation, Singapore has invested heavily in talent development programs. One good example is the collaboration with Stanford University [6] to develop the Singapore-Stanford Biodesign program [7] that allows Singaporeans from different backgrounds, such as engineering, medical, and business, to be trained in the medical device innovation process under the guidance of industry experts in Silicon Valley. They will also spend a significant portion of their time in the Asian clinical setting to be fully immersed and use their skills in biodesign to solve unmet clinical needs in Asia.

Singapore has managed to differentiate itself from global competitors by building a solid reputation for stability, quality, and reliability, making it an intuitive choice for manufacturing, particularly when it comes to Class III cardiovascular devices. Its strong base of suppliers respects Singapore's strict IP protection and international regulatory requirements. The presence of contract manufacturers like Intricon [8], Univac [9], and Heraeus [10] provides opportunities for flexible, outsourced manufacturing models. Last month, Heraeus, the precious metals and technology group headquartered in Germany, announced the opening of its first Medical Wire Competency Center in Singapore. Part of the reason for having its facility in Singapore was to be closer to its major cardiac rhythm management customers who have been relocating their medical device manufacturing to Southeast Asia.

While Asia provides an exciting growth opportunity for global medical device

companies, the challenges of accessing the Asian market are undeniable. Pricing, healthcare financing, regulatory policy and frameworks, training capacity, and patient awareness are some of the important factors that will influence market access in Asia. Medtronic set up a business model innovation team in Singapore to better understand these factors from the Asian perspective and devise new market access strategies for the region. Singapore's strong regional networks, deep healthcare and regulatory expertise, and ability to access top global talent makes it an ideal base for companies to develop their market access strategies. In fact, companies find Singapore extremely unique because they can gain access to innovation, manufacturing, and market access capabilities all within the 700 km2 city state located in the heart of Asia.

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