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VALUE PERCEPTION OF INNOVATIVE FEATURES IN ICD/CRT-D DEVICES, INCLUDING REMOTE MONITORING VIA BLUETOOTH CONNECTION AND PATIENT APP

Jasper van de Sande[1], MSc; Zenichi Ihara[2], PhD; Li Lei Tsien[3], Msc/MBA

1 – Suazio Consulting, Antwerp, Belgium. 2-Abbott HE&R EMEA, Zaventem, Belgium. 3- Abbott CRM EMEA, Zaventem, Belgium

OBJECTIVES

Implantable cardioverter-defibrillator (ICD) and cardiac resynchronization therapy defibrillator (CRT-D) devices are life-saving therapies for patients with arrhythmias and heart failure. To improve patient outcomes, manufacturers constantly improve devices with innovative technology features. Improved remote care and connectivity demonstrated high perceived benefits in recent patient research. In addition to these findings, this study was designed to understand the value perception of newly developed innovative features, including Bluetooth-based remote monitoring (RM) using a patient App, with clinical and non-clinical stakeholders.

METHODOLOGY

A survey, including a conjoint analysis (Sawtooth), was designed to measure product features importance and differentiation, using a set of 10 attributes. N=100 interviews (N=75 clinicians and N=25 hospital purchasers) were conducted across 5 countries (Germany, France, UK, Italy, Spain) by phone, followed by an online conjoint exercise. Purchasers were interviewed by phone only. Survey time was 45 minutes on average. Participants had to have a least 2 years experience in purchasing and/or implanting ICD/CRT-D devices, utilize at least 30 devices on institution level a year and be involved in the decision-making process of purchasing ICD/CRT-D devices.
The analysis of the results were done with SPSS and Sawtooth software. The open qualitative questions we analyzed using in-vivo coding.

RESULTS

Current selection criteria

On average our sample of physicians and purchasers had 13/16 years of experience in their role. Our sample indicated primary working location with 47% Academic-, 41% Public- and 12% Private Hospitals. A total average of 130 ICD and 102 CRT-D devices were implanted in the last year. 27% of the respondents indicated they switched ICD/CRT-D brands over the last few years (Figure1). Main reasons were Financial Offering and Innovative Device Features. The main influencer in the purchasing process was shown to be the implanting physician (53%), followed by the head of department (22%) (Figure 2). Overall, the most important elements for adopting a new ICD/CRT-D were Price, Device Features and Support, including technical support and clinical evidence generation (Figure 3).

New product features

Main ICD/CRT-D technical product attribute importance scores were Longevity (15%, 18%) and Volume (9%,9%). In contrast, Brand was not considered important (6%) (Figure 4). For CRT-D, Dynamic AV delay optimization with programmable delta (10%) came within top 3.
Highest ICD/CRT-D product feature levels utility scores were observed for Longevity - 10.9y-13.2y/9.1y , Volume - 29.5CC/32.5CC , Max Delivery Energy – 40J/40J, MRI Compatibility - 1.5T/3T Auto detect and auto time-out, and CRT-D Dynamic AV Delay - Available: Programmable delta. A product configuration with all these product feature levels would gain the largest product preference share.

Remote monitoring (RM)

RM utilizing Bluetooth (with smartphone App) was rated 5,2 on a 7-point attractiveness scale by the Clinicians. This high attractiveness was consistent across device band usage groups and most pronounced in Italy (6.1) and Spain (5.7).
Reduction of Hospital Workload due to less patient visit, Regular Patient Surveillance and Cost Reduction were mentioned as most important benefits by the Purchasers, while reduction of hospital stay was ranking low in order (Figure 5).

CONCLUSIONS

This research highlights the value perception of ICD/CRT-D product features. Bluetooth RM is perceived attractive and expected to have additional cost reduction benefits by decision-making clinicians and purchasers. These results add to a recent patient study demonstrating high satisfaction of patients on RM.

Limitations and COVID-19 impact

This research was performed prior to the outbreak of COVID-19. Therefore, the results may not have fully captured the perception of unmet need around RM which has evolved significantly as various researches and reports show. In a similar market research study done in the US during the first wave of COVID-19 (Apr. 2020), the importance of RM in ICD/CRT-D was among the top 3 value drivers by both clinicians and hospital purchasers). Moreover, this research was performed prior to the market launch of the latest Bluetooth-enabled devices, hence the respondents had no practical experience on the implementation of such devices. The current results confirm the greater potential around RM.

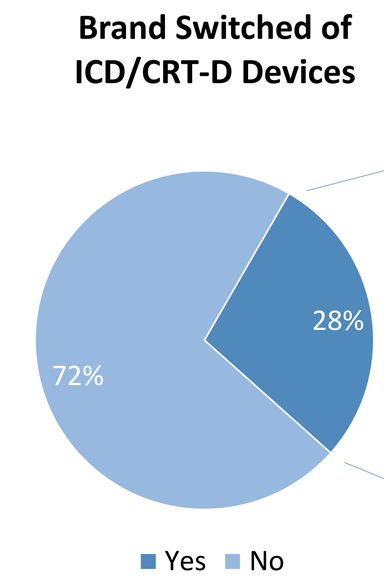

Figure 1. % of participants who indicated to have switched to different main ICD/CRT-D brand. Clinicians and Purchasers, N=100

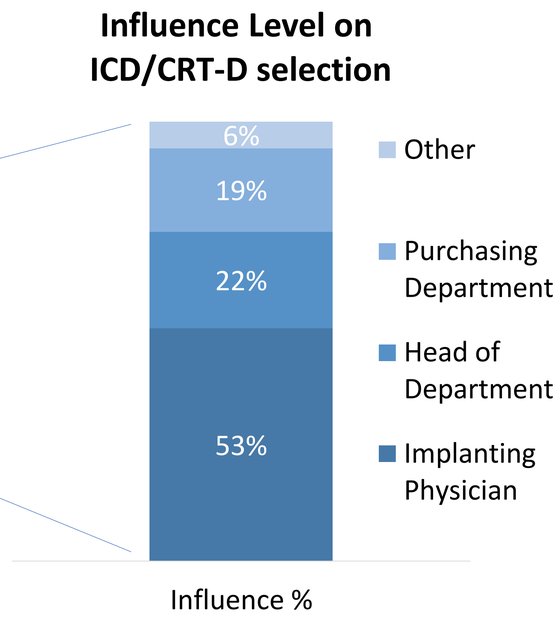

Figure 2. Influence % in ICD/CRT-D selection. Clinicians N=75

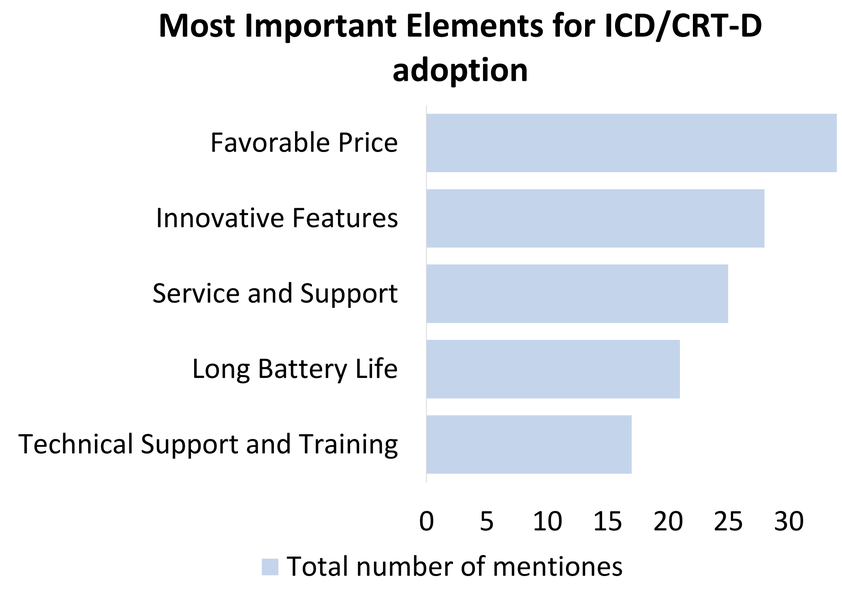

Figure 3. Most important elements for adopting an ICD/CRT-D device. Clinicians N=75

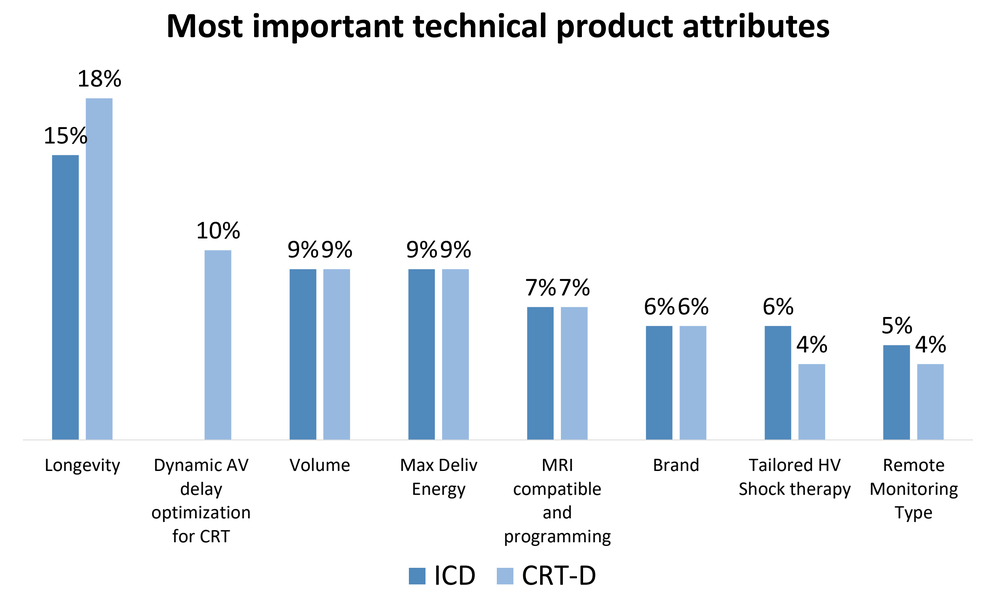

Figure 4. Product attribute importance scores. Clinicians N=75

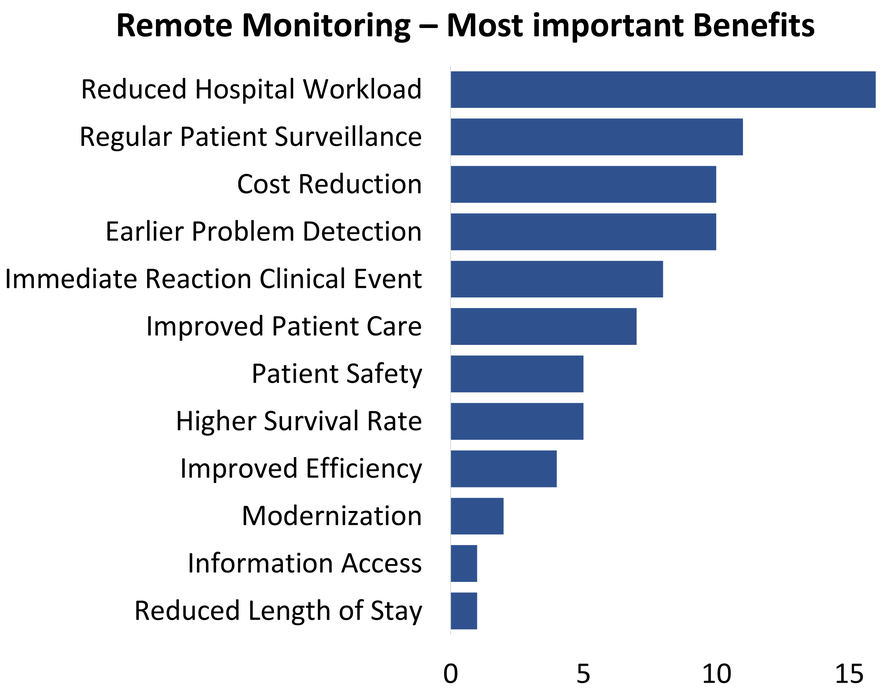

Figure 5. Total mentions of most important benefits of remote monitoring. Admin/Purchasers, N=25

For more information, please mail to: j.vandesande@suazio.com