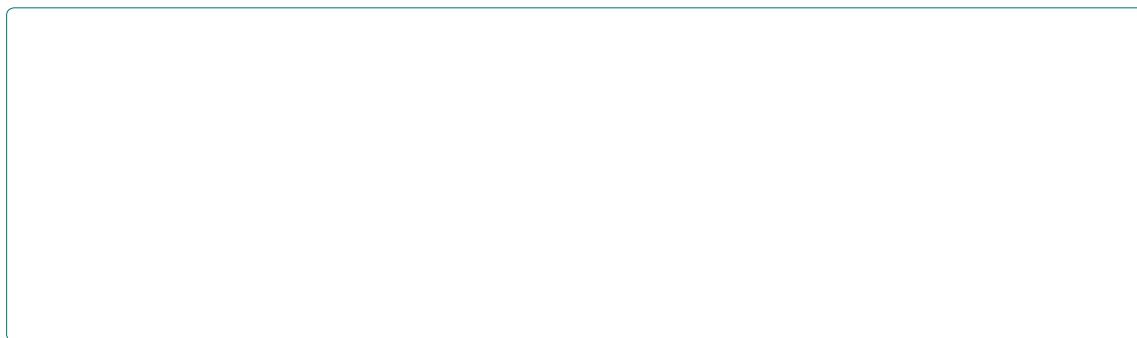


Current and Future Directions in Organizational Models for Remote Monitoring of Cardiac Implantable Electronic Devices

Souza Batista*



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Introduction

In Australia and New Zealand, cardiac pacemakers (PM) have been implanted since 1961. In Australia and New Zealand, implantable cardioverter-defibrillators (ICDs) were initially utilised in 1984, and more recently, biventricular models for cardiac resynchronization treatment were introduced. An Australian and New Zealand cardiac implanted electronic device (CIED) survey has been conducted every three to four years since 1972, and the calendar year 2017 was chosen as the survey period to coordinate with earlier studies.

It is now obvious how remote monitoring (RM) for cardiac implanted electronic devices (CIEDs) may enhance both clinical and financial results. The complexity and sophistication of devices are rising, and there are more patients with CIEDs who need continuing maintenance. RM implementation across electrophysiology (EP) practices over the past 10 years has not been consistent, despite the evidence of benefit and necessity. The absence of instructions on how to handle RM data and patient follow-up is one of the main obstacles to adoption. RM clinics now have a variety of organizational structures [1-2].

Improved RM uptake and effectiveness call for an emphasis on clinic model optimization, which became more critical during the COVID-19 pandemic when the Heart Rhythm. Some of the most recent IMDs have begun to include several communication and networking features, sometimes referred to as “telemetry,” as well as ever-more complex computational capability. Due to the ability of medical professionals to remotely access data and change the implant’s configuration, this has given implants more intelligence and given patients more autonomy (i.e., without the patient being physically present in medical facilities). Telemetry and computing capabilities enable healthcare professionals to continuously monitor the patient’s state and create novel diagnostic methods based on an Intra Body Network (IBN) of medical devices, in

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Ultrasound-guided venous puncture: The patient was prepped as normal in a sterile way and put in a supine posture without trendelenburg so that the vein could be accessed with sonography. The axillary vasculature was imaged using a surface vascular US probe that was put into a sterile plastic sleeve. The venous puncture was visually guided by real-time US imaging of the artery and vein's spatial connection and the path of the access needle. Under US visualization, a local anesthetic was applied using lidocaine hydrochloride 2 percent along the puncture needle's path. The vein was located in the center of the screen using an out-of-plane approach, and the probe was held perpendicular to the skin with the left hand [6].

While keeping the plunger under negative pressure and keeping an eye out for tissue movement on the US screen, a 7-cm long, 18-gauge Cook bevel-tipped needle was inserted beneath the US probe. The syringe was withdrawn and a guide wire was inserted into the lumen after the needle was visible to have entered the vein and blood flashed into the syringe. From here, a sheath and dilator may be positioned as normal [7].

Management of antithrombotic therapy: Aspirin, Clopidogrel, Ticagrelor, Dabigatran, Rivaroxaban, Apixaban, low weight molecular heparin, and Vitamin K Antagonists [VKA] were used both before and after the surgery as part of the management of antithrombotic treatment. On the day of the treatment, the International Normalized Ratio (INR) objective for VKA patients was 2-3. If the INR was above 4, the implantation was delayed [8].

Discussion

Regarding the most pertinent application fields for the research's central question, three stands out as being particularly important. Emergency response, population monitoring, and active ageing monitoring are a few of them. Four additional application domains were noted, nevertheless. These include of encouraging a healthy lifestyle, organizing care services, providing assistance to those with disabilities,