

The cochlear implant clinic multidisciplinary team meeting

BY CLAIRE ISELI AND ROBERT BRIGGS

The world's first cochlear implant clinic was in Melbourne, where multichannel devices were designed by Graeme Clark at the beginning of the cochlear implant era. We are fortunate to hear from **Claire Iseli** and **Rob Briggs**, surgeon members of this enduring clinic at the Royal Victorian Eye and Ear Hospital, to tell us how it is still done Down Under.

The cochlear implant clinic (CIC) at The Royal Victorian Eye and Ear Hospital (RVEEH) is a unique service that is steeped in history.

As the world's first public hospital CIC, it commenced in 1982 following the pioneering work of Graeme Clarke and his research team. The first prototype multichannel cochlear implant was produced in 1978 and the first commercial device in 1982. Since then the service has grown in strength and size and now serves all Victorian patients considering implantable hearing devices, as well as patients from Tasmania. Through this service, over 4500 patients have received cochlear implants with subsequent programming and long-term follow-up. Over recent years the service has extended to include multiple functional sites where recipients, as well as potential candidates, attend for audiological services. The CIC is a hub of research, collaborating with Melbourne University, the Hearing Co-operative Research Centre and the Bionics Institute as well as industry, to improve outcomes for patients and extend knowledge in this area. Fundamental to this research has been the collection of detailed outcome data on all adult and paediatric recipients. This has allowed the clinic to develop evidence-based guidelines for implant candidacy. These guidelines continually evolve and have helped to expand cochlear implant indications worldwide.

Decision-making about cochlear implant candidacy and postoperative surgical and audiological care is not always



The CIC MDT hard at work.

straightforward, with every patient having different challenges and priorities. Although the CIC has developed standardised protocols for preoperative assessment, intraoperative surgical technique and postoperative care, it is critical that these are tailored not just to the patient's hearing loss, anatomy and medical conditions, but also to their personal goals and individual hearing needs. To achieve this the CIC multidisciplinary team meeting (MDT) has evolved to ensure a high standard of care for all patients.

What is the CIC MDT?

A weekly meeting of clinicians from multiple speciality areas involved in the care of patients with implantable hearing devices.

What is its purpose?

The primary purpose of the meeting is to bring together key members of the implantable device care team to determine the best advice for the individual patient on implant candidacy, expected outcomes and post-insertion management. It ensures all relevant investigations have been done to allow safe decision-making, and monitors outcomes for every patient implanted. It facilitates early identification of device and medical issues and ensures collaborative care amongst the team to address these. The MDT meeting allows standardisation of care across the state and develops appropriate care protocols. Essentially it facilitates individualised decision-making within a standardised framework. For the patient, it ensures their care has been considered from all perspectives and that they receive unified information about the ideal treatment plan.

Secondary purposes

Whilst the meeting is very patient-centred, it serves other purposes beyond the care of the individual. It allows monitoring and

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auditing of protocols and active evolution of these protocols as new information is available. It also allows monitoring of outcomes on a broad and individual level, observing surgical, audiological and device-specific aspects. Furthermore, it encourages exchange of knowledge and experience between colleagues of the same and different disciplines, which is team building and unifying. Through this, it helps development of relevant and contemporary research topics.

How is this achieved at CIC

The RVEEH CIC MDT convenes weekly. The core attendees are the surgeons, audiologists and speech pathologists from the RVEEH CIC. In addition, representatives from the hospital administration, social workers, researchers from Melbourne University and the Bionics institute, and device manufacturer representatives are also present. This includes some enduring members who treated the first multichannel cochlear implant recipient in Melbourne, adding a wealth of knowledge and experience. More recently, the MDT meeting has included a teleconference connection to clinical units in Tasmania, Geelong and south-east Melbourne.

The meeting follows a standardised format: discussing new patients considering implantable devices in Victoria and Tasmania to determine their candidacy; reviewing upcoming surgical cases to ensure they are ready for surgery; and reviewing the outcomes of previous cases, both immediately post-op and after device activation. Outcomes at three months and 12 months post-implant are also reported. It also offers a forum for discussing complicated cases encountered by any of the attending clinicians. Patients are generally presented for the first time once relevant investigations necessary to make a decision about implant candidacy have been completed and results are available. The goal of the team is that every patient is presented before an implant operation is performed.

This team also collaborates and communicates with other relevant specialists/services involved in patient care, such as Hearing Australia, local audiologists, anaesthetists, developmental

paediatricians, early child development teams and educational institutions. These communications are then reported back to the meeting, where appropriate, for ultimate decision-making. Minutes are distributed to all relevant parties soon afterwards.

How we are evolving

The CIC MDT is a very effective forum for encouraging growth and development in the care of cochlear implant and other implantable hearing device recipients. In particular, it encourages and facilitates widening of implant candidacy through participating and reviewing the outcomes of local and international research relevant to our patients. In recent years this has included patients with more residual hearing as well as those with single-sided deafness, including children. It has also allowed a wider option of implantable devices available to our patient population through early incorporation of appropriately researched new devices. The CIC continues to be actively involved in First in Human trials of new technology, as well as long-term research on previously implanted devices.

The MDT provides a forum for all clinicians to become aware of these trials and increase recruitment, plus address any questions they have about a given trial. It also provides an avenue for all clinicians to hear the results of recent trials to incorporate into their practice and for each attendee to share knowledge gained at local and international conferences.

As the geographic range of patients utilising this service has expanded, the CIC has actively engaged local hearing providers to reduce the need for patients to commute long distances into the centre of Melbourne. To maintain the high standard of care, this has been further facilitated by teleconference attendance of these services at the MDT. This allows patients to feel confident they are receiving standardised care without the need for travel.

Future directions

The CIC MDT is always looking for ways to improve and evolve. Consideration has been given to inclusion of non-implantable device representatives such as hearing aid providers, inclusion of developmental paediatricians via teleconference, and greater attendance of remote team members through additional teleconference links.

Conclusion

The care of the patient with significant hearing loss is complex and multifaceted. Decision-making must incorporate not just the degree of hearing loss but the individual's audiological and medical

history, anatomical factors and the hearing needs of the individual. A cochlear implant multidisciplinary meeting is a fundamental requirement for any implantable device service, and ensures the best available care for all the patients it serves.

UPDATE

In light of the COVID-19 pandemic, we have currently suspended the face to face meeting and are now running the meeting as a teleconference using Zoom. This is proving quite effective.

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AUTHORS



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