NHS
Manchester University
NHS Foundation Trust

The Richard Ramsden Centre for Hearing Implants

ANNUAL REPORT 2018-2019

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THE RICHARD RAMSDEN CENTRE FOR HEARING IMPLANTS

Introduction

Cochlear implantation has been established in the United Kingdom (UK) for over 3 decades and there are currently just over 17000 patients using cochlear implants (see figure 1) in this country.

Cochlear implants are funded by NHS England (Ref: D09/S/A) if patients meet the NICE guidance (TA166). This guidance has recently been updated to allow more patients with severe-profound hearing loss to benefit from this intervention (see page 8).

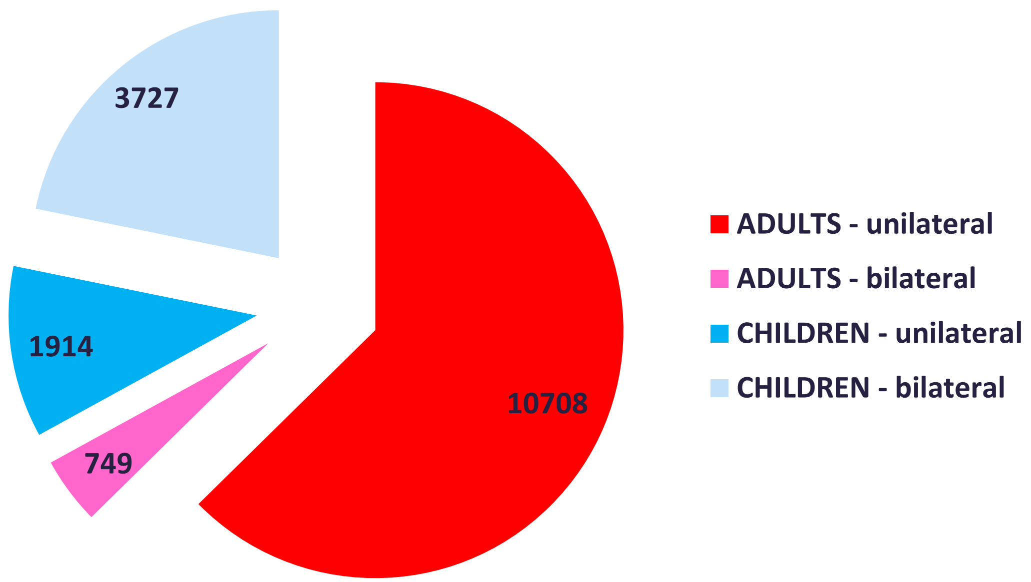


Figure 1: Total number of maintained patients in the UK
(from BCIG's annual data collection 2017-18)

Manchester Auditory Implant Programme

The auditory implant programme in Manchester was established in 1988 by ENT Consultant Richard Ramsden, using funding obtained from the HEAR (Help Ear & Allied Research) charity to provide cochlear implants.

The Hear Charity was established in 1988 to support cochlear implantations and research into treatment of hearing loss at the University of Manchester. The charity supported the Manchester auditory implant programme to help develop technology and provide rehabilitation for implant users. The charity also supported numerous research projects and provided funding for staff and patient training and education. In the mid-1990s government resources became available to fund cochlear implants for patients with profound sensori-neural hearing loss. The Hear Charity closed in 2014 and is no longer active.

By the end of March 2018, we have implanted over 2500 devices (see figure 2) and over 1500 patients are currently managed by the Manchester auditory implant programme. Around 150 new patients (see figure 3) are implanted every year.

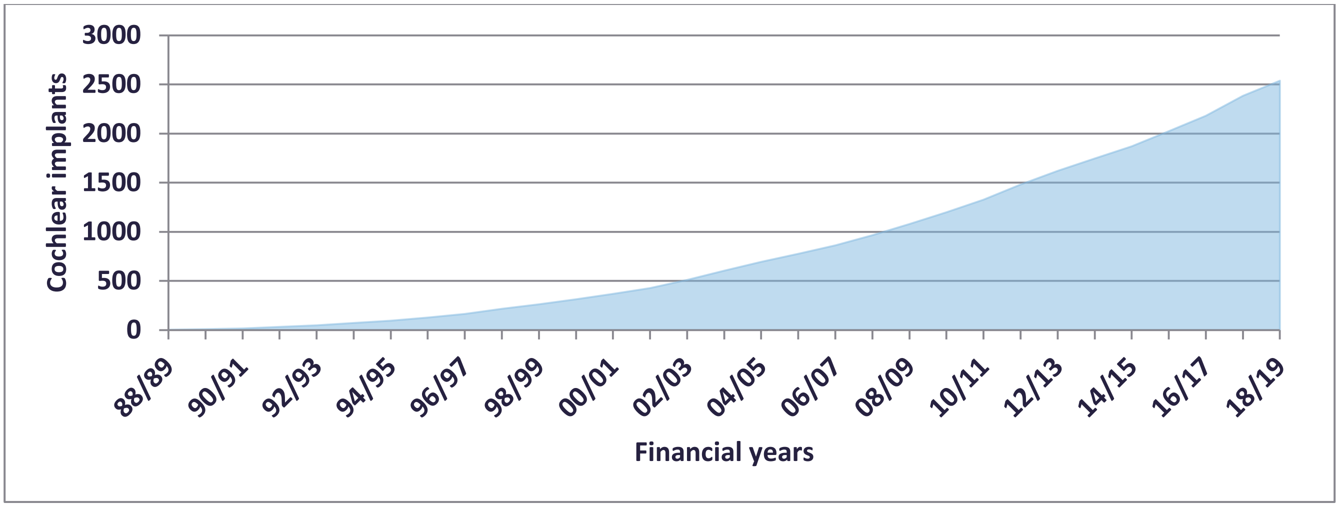


Figure 2: Cumulative numbers of implanted devices

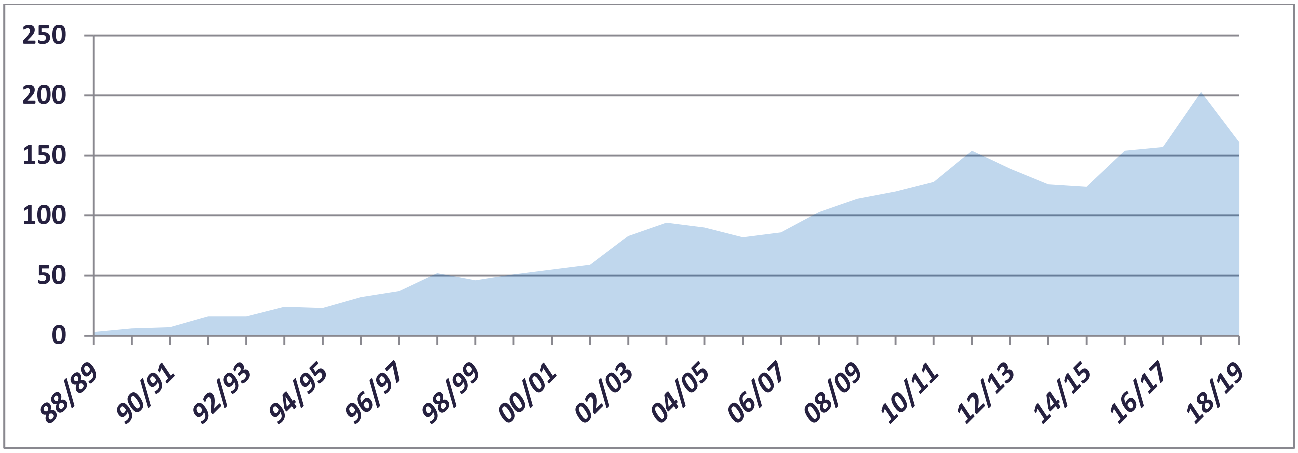


Figure 3: Year on year numbers of implanted devices

Our facilities

In December 2014 Head and Neck out-patient services, including the Manchester auditory implant programme, moved to a new facility in the Peter Mount Building on the Central Manchester site. The Centre has state-of-the-art equipment in new out-patient facilities. The implant centre was named 'The Richard Ramsden Centre for Hearing Implants' in honour of Professor Ramsden.

The new centre was made possible following a substantial donation from the HEAR Charity and it became home to Manchester's adult, adolescent and paediatric auditory implant programmes.

The Manchester Head and Neck Centre at Peter Mount Building also incorporates:

- ENT Out-patients
- Oral and Maxillofacial Surgery
- Audiology (Hearing and Balance) Centre
    - Bone Conduction Hearing Devices
    - Diagnostic and rehabilitation services for those with balance difficulties
    - Middle ear implants
    - Rehabilitation for adults with learning disabilities
    - Specialist Hearing Assessment and Rehabilitation Clinic (SHARC)
    - Tinnitus counselling and therapy

The Audiology (Hearing and Balance) Centre provides diagnostic and rehabilitative services for adults and children with symptoms of hearing loss, dizziness, tinnitus or hyperacusis. Many of the services offered by Central Manchester Audiology Services are specialist regional services.

This allowed the different audiology services in Central Manchester to increase collaborative working under one roof.

30th anniversary

2018 saw the Manchester auditory implant programme reach an important milestone: it is 30 years since we carried out our first cochlear implant operation. We have seen a number of changes in that time and we have always strived to remain at the forefront of innovation and research in the field of cochlear implantation.

Over the past 30 years the programme has evolved into the largest auditory implant programme in England. We have seen many changes since we were first established not just in staffing but also in demand for surgeries and types of devices offered.

In 1988 the team consisted of only 3 staff members we now have a team of 27. In our first year we carried out only 6 cochlear implantations, while in 2018-2019 127 patients received cochlear implants (161 devices in total).

We were the first programme in the UK to complete 1,000 implant surgeries. We have the largest population of adult Auditory Brainstem Implant (ABI) recipients and we were also the first programme to offer ABIs to children in the UK.

We look forward to supporting our patients for the next 30 years.

THE MULTI-DISCIPLINARY TEAM

Audiologists / Clinical Scientists

Tamasin Brown

Andrew Causon

Sarah Hornby

Deanne Jayewardene-Aston

Morag Lockley

Unai Martinez de Estibariz

Deborah Mawman (Adult Coordinator)

Kerri Millward

Martin O'Driscoll (Head of Department)

Craig Went

Elizabeth Whittle

Assistant Technical Officers

Andy Cooper

Angela Fuller

Admin Officers

Anne Stockbridge

Deniece Walker

Juleka Begum

Speech & Language Therapists

Emma Gray

Lise Henderson (Paediatric Coordinator)

Jayne Jones

Helen Ley

Christine Melling (Adolescent Coordinator)

Teacher of the Deaf

Rebecca Bentley

Hearing Therapist

Karen Smith

Clinical Psychologist

Vicky Carek

Surgeons

Iain Bruce

Simon Freeman

Simon Lloyd

Emma Stapleton

Scott Rutherford (ABI neurosurgeon)

CRITERIA FOR COCHLEAR IMPLANTS

National Institute for Health & Care Excellence (NICE) Guidance review

Since January 2005, the NHS in England and Wales has provided funding for medicines and treatments recommended by the National Institute for Health and Care Excellence (NICE). NICE is an executive Non-Departmental Public Body of the Department of Health & Social Care in the United Kingdom. When considering the funding of treatments, NICE invites consultee and commentator organisations to take part in an appraisal process. This includes patient groups, organisations representing health care professionals and the manufacturers of the product undergoing appraisal. Once the appraisal is completed this is submitted to NICE for approval. The process aims to be fully independent of government and lobbying power, basing decisions on the clinical and cost-effectiveness of different treatments.

In January 2009, NICE recommended that a cochlear implant in one ear should be available on the NHS as an option for people who are severely or profoundly deaf if they do not get enough benefit from hearing aids. Cochlear implants in both ears were made available on the NHS as an option for children, and for adults who were blind or have other disabilities and who also had a severe or profound hearing loss. The definition of a severe to profound hearing loss used in this guidance was a hearing loss above 90 decibels at two frequencies (2000 and 4000 Hz). In addition to the hearing test, adults had to score ≤ 50% on a sentence test and children must not be developing age appropriate speech, language and listening skills.

In April 2019, NICE updated the guidance, relaxing the criteria by defining severe to profound deafness as a hearing loss above 80 decibels at 2 or more frequencies (500 Hz, 1,000 Hz, 2,000 Hz, 3,000 Hz and 4,000 Hz). In addition to the hearing test, adults must score ≤ 50% on a word test and children must not be developing age appropriate speech, language and listening skills.

This relaxation of the criteria for cochlear implantation is good news for patients in the UK who have a severe to profound hearing loss. Potentially hundreds more people whose hearing loss is too severe to benefit from a conventional hearing aid may be eligible to receive a cochlear implant on the NHS.

The NICE guidance is due to be reviewed in March 2022. Further information can be found at: https://www.nice.org.uk/guidance/TA566

New guidance (TA566)

This guidance (TA566) updates and replaces NICE technology appraisal guidance on cochlear implants for children and adults with severe to profound deafness (TA166). For the purpose of this annual report, the data presented on this document is based on previous guidance (TA166) as it relates to the time period between April 2018 and March 2019.

ADULT COCHLEAR IMPLANT PROGRAMME

Clinical activity in current financial year (April 2018 to March 2019)

Referrals & Procedures

157 new referrals were received in the 2018-2019 financial year and 71 new patients were implanted, resulting in a 45.2% conversion rate.

A total of 89 cochlear implant related procedures were performed in adults. Figure 4 shows a breakdown of the surgeries performed.

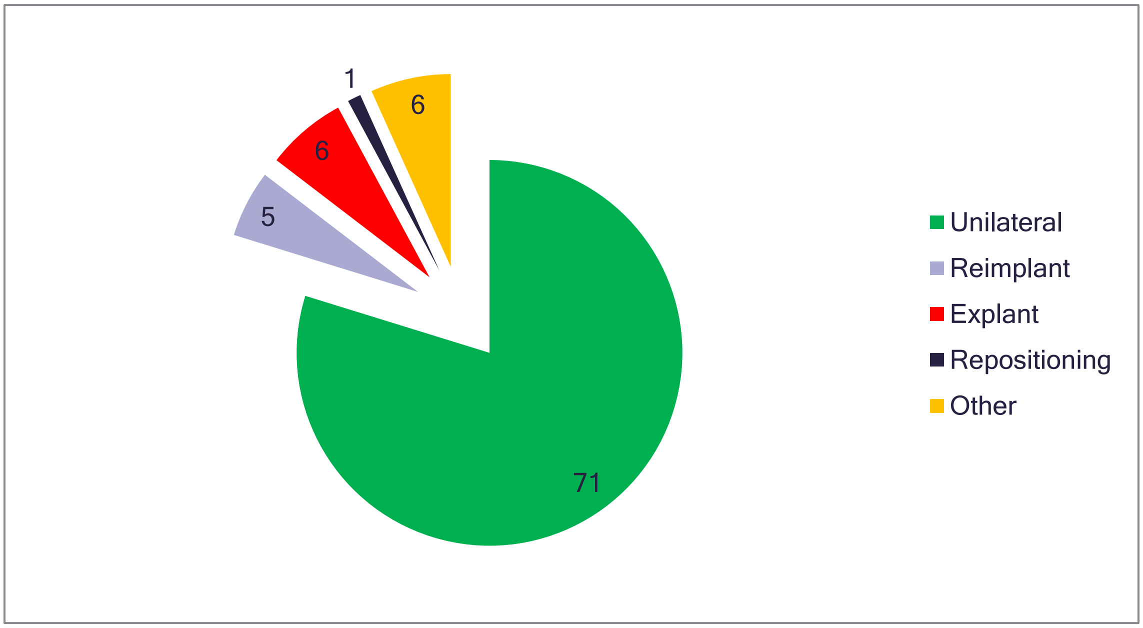


Figure 4: Surgical procedures

Devices

Excluding explants, repositioning and other procedures, a total of 71 devices were fitted in this financial year. Detailed charts on the types of internal devices, model of speech processor and manufacturers are shown in figures 5 to 7.

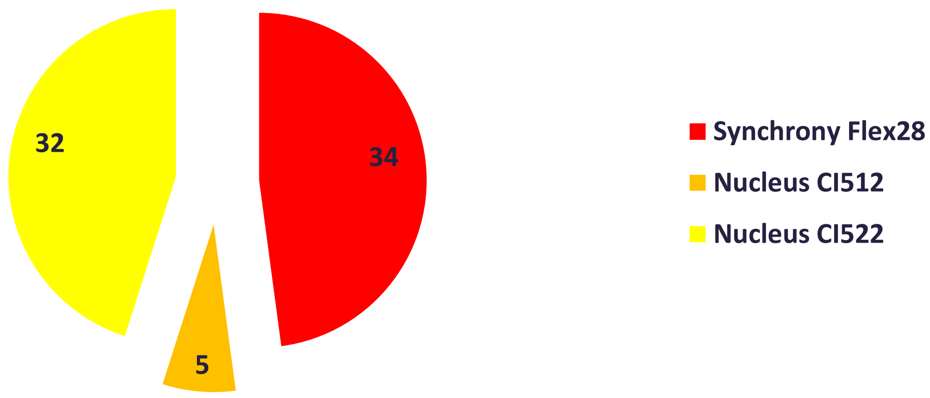


Figure 5: Implant electrode arrays by type

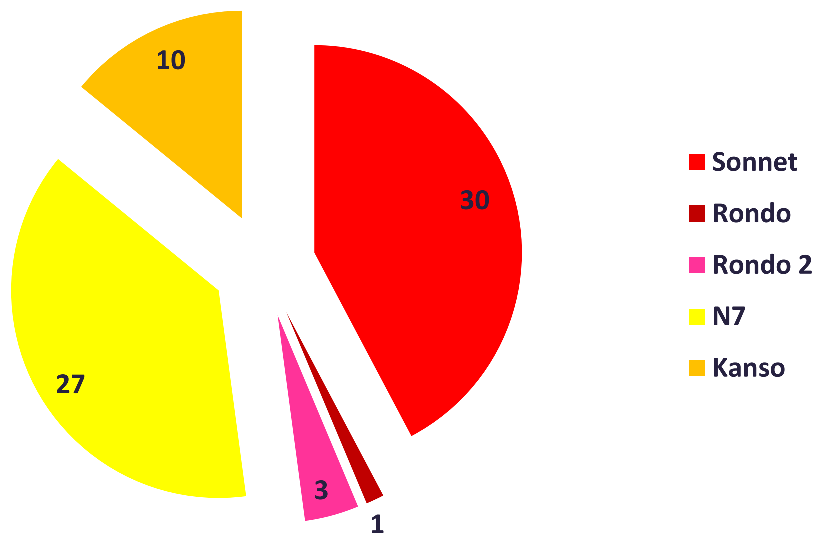


Figure 6: Speech processors by model

Figure 7: Implants by manufacturer

All patients are offered a choice of speech processor unless there is a clinical reason to recommend a specific implant system. Currently, our programme has been recommending Cochlear's CI522 electrode array for candidates with more residual hearing due to success in hearing preservation with this electrode array. If the residual hearing is preserved, some patients can then be Electro-Acoustic Stimulation (EAS) users, which combines a hearing aid and a cochlear implant in the same ear to maximize their hearing abilities. The Nucleus 512 electrode array is the preferred choice for candidates who may be at risk of non-auditory stimulation.

Demographics

The average and median age of the patients implanted was 58 years (range = 20 - 89 years). Figure 8 shows the age distribution of the implanted adult population during the 2018-2019 financial year period.

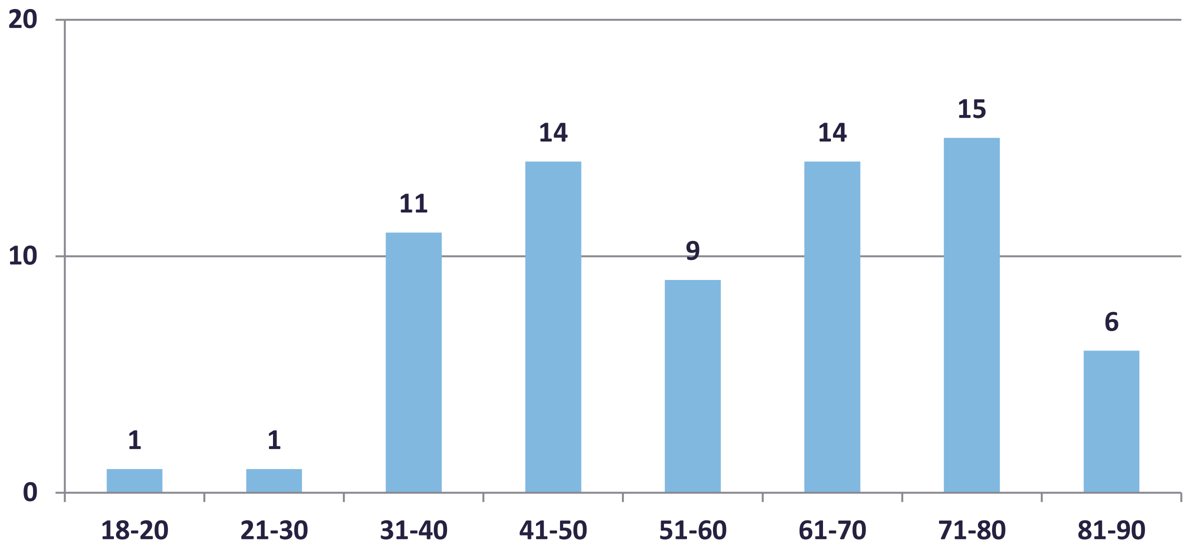


Figure 8: Age of patient at implant

Post implant support

Patients typically attend 5 appointments with the adult team within their first six weeks of implant use. During these appointments the speech processor is programmed and patients receive rehabilitation through an individualised auditory and communication skills training programme with a therapist. Where appropriate, the training programme includes tactics for using the telephone, music therapy and advice about using assistive listening devices. Patients are then followed up at three, nine and twenty-one months after their initial activation. Additional rehabilitation sessions are offered to patients as required. Following this, a patient led appointment is sent on an annual basis. Every 6 years the patient will be offered a speech processor exchange.

Outcomes

Speech perception and lip-reading function is measured using standardised recorded test materials for each patient at the pre-implant stage. Following implantation, the tests are repeated at one week, three months, nine months and twenty-one months, and then annually as required. Where possible, patients who use English as a second language, or who cannot communicate in English are evaluated in their own language using language interpreters to translate the test materials to the appropriate language. Figure 9 shows the improvement in speech discrimination using the Bamford-Kowal-Bench (BKB) sentence test in quiet at pre- and 9 months post-operative stages in this financial period. Post-operative scores also show cochlear implant only and bimodal (cochlear implant in one ear and a hearing aid in the opposite ear) scores for those recipients with residual hearing in the non-implanted ear.

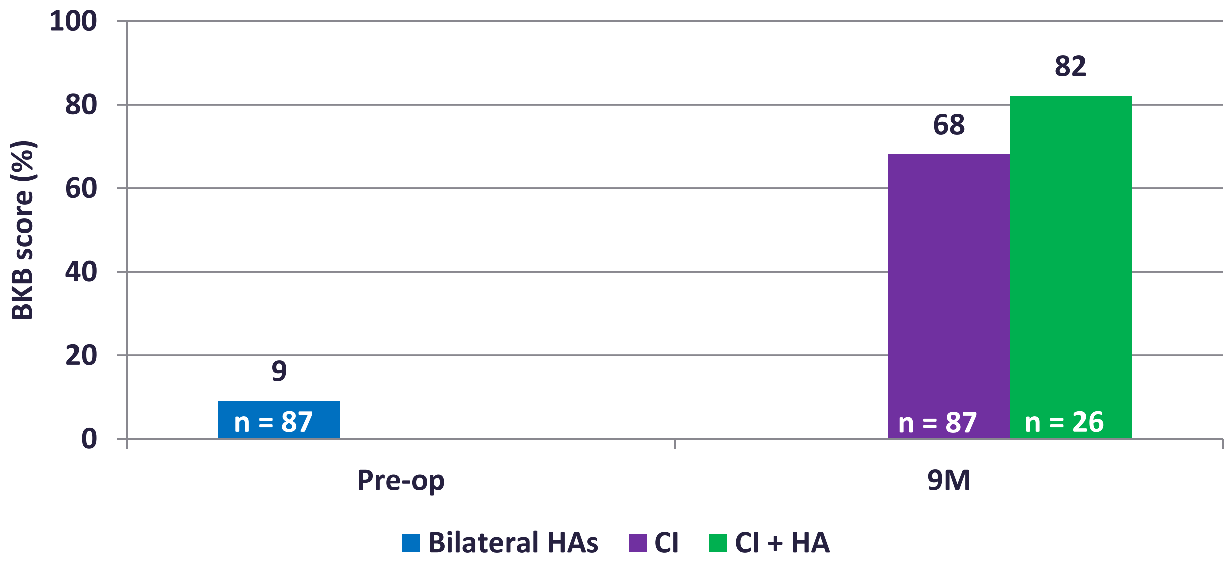


Figure 9: average BKB scores in quiet at pre- and 9 months post-operative stages.

Sound-field aided thresholds are also measured post operatively. Figure 10 shows the average aided thresholds at the 1 week, 3 month and 9 month stage, as well as their average pre-op unaided thresholds. Thresholds ≤ 40 dB HL at frequencies between 250 and 8000 Hz allow good access to normal conversational speech levels and everyday sounds and are considered optimal for cochlear implant users.

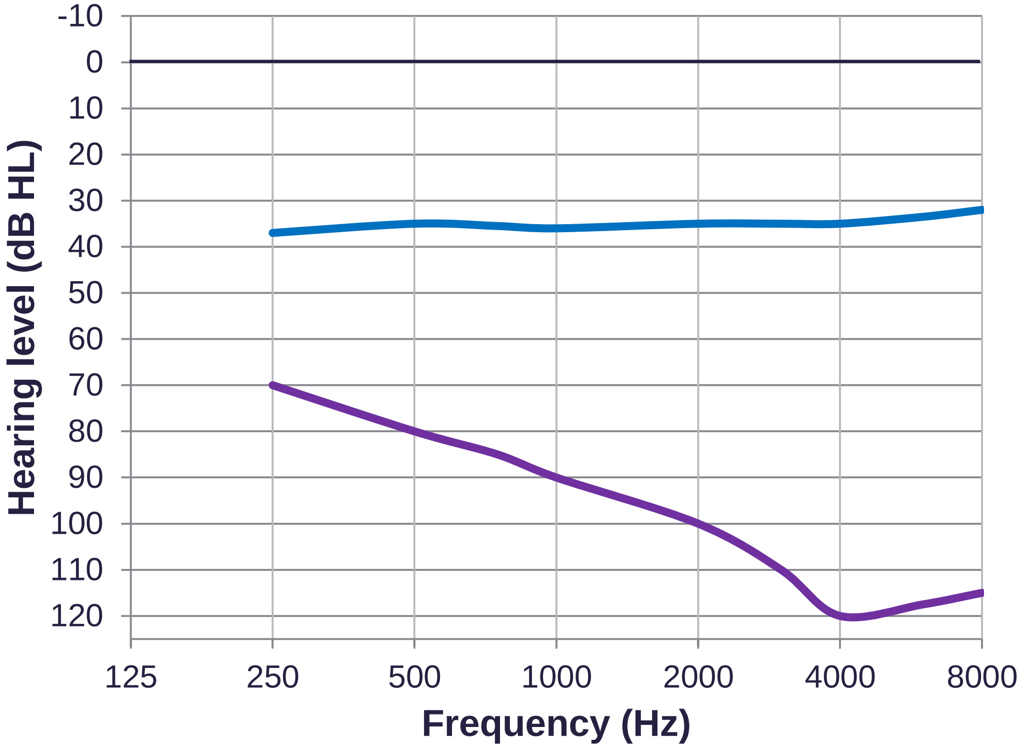


Figure 10: Threshold levels at pre op (blue) and 9 months post op stages (purple)

Explantations

Six explantations were carried out during this financial year. Based on the International Classification of Reliability for Implanted Cochlear Implant Receiver Stimulators (Battmer et al., 2010), four out of six procedures were due to medical problems (D), one due to device failure following head trauma (C) and one due to performance decrement over time (B2).

Service Evaluation

A satisfaction questionnaire is sent to all newly implanted users at their 9 month post implant stage to gauge their views on their cochlear implant progress and our service. All responses are anonymous:

- 88% of respondents report that their cochlear implant exceeded their expectations and 12% report that it met their expectations.

- 96% of respondents report using their cochlear implant every day (all day long or part of the day)
- 96% of respondents report obtaining great benefit from their cochlear implant
- 96% of respondents feel it was worthwhile having a cochlear implant
- 100% of respondents would recommend a cochlear implant to a friend or relative if they had a similar hearing problem
- 100% of respondent were satisfied with the treatment/support that they received from the staff on the cochlear implant programme
- 100% of respondents rated the treatment/support that the staff at the cochlear implant programme provided as good or very good

Below are statements from respondents regarding why they felt this treatment was worthwhile:

"I can hear voices and noises that I couldn't hear before!"

"I am grateful I can converse with people, enjoy my church life, the joy of mixing with friends and mostly my family"

"It boosted my confidence."

"I am able to make telephone contact to my family, listening to birds was amazing which I had never heard before"

"I can now hear a lot better and can hear birds singing"

Among the disadvantages noted by cochlear implants users, the following were reported:

- difficulties hearing in background noise
- concerns requiring MR scans
- hearing while swimming

With regards to these points, it's important to note that the average CI user will hear better in noise compared to their pre-operative stage, but there are still significant limitations to the benefit derived in challenging environments. Assistive listening devices have started to bridge this gap as technology improves over time. Similarly, more and more manufacturers now offer implants compatible for MR scans. Lastly, new kits to hear with an implant while swimming have become available in recent years.

PAEDIATRIC COCHLEAR IMPLANT PROGRAMME

Clinical activity in current financial year (April 2018 to March 2019)

Referrals & Procedures

83 new referrals were received in the 2018-2019 financial year and 53 new patients were implanted, resulting in a 63 % conversion rate. Fifty seven children (a total of 91 cochlear implants) were implanted during this financial year. A detailed info-graphic on the types of implants, processors and configuration of implantation is shown below in figures 11 to 13.

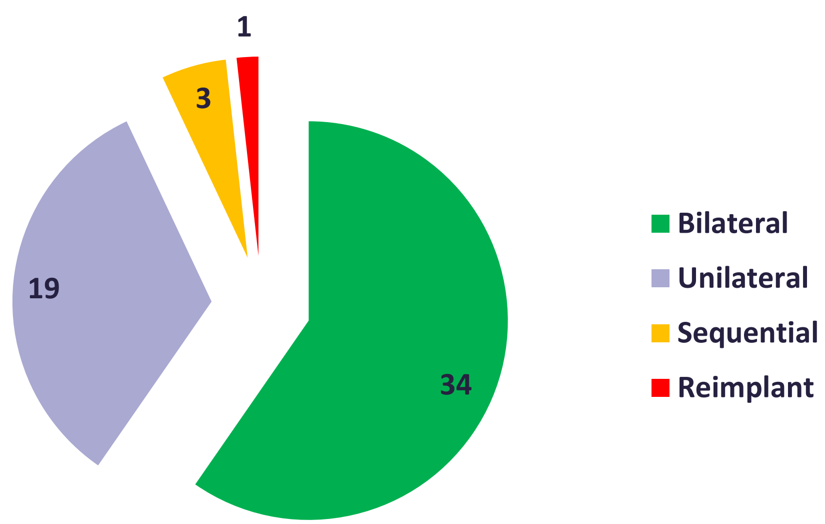


Figure 11: Breakdown of implanted ears for children (age 0-17 years) implanted in 2018-2019

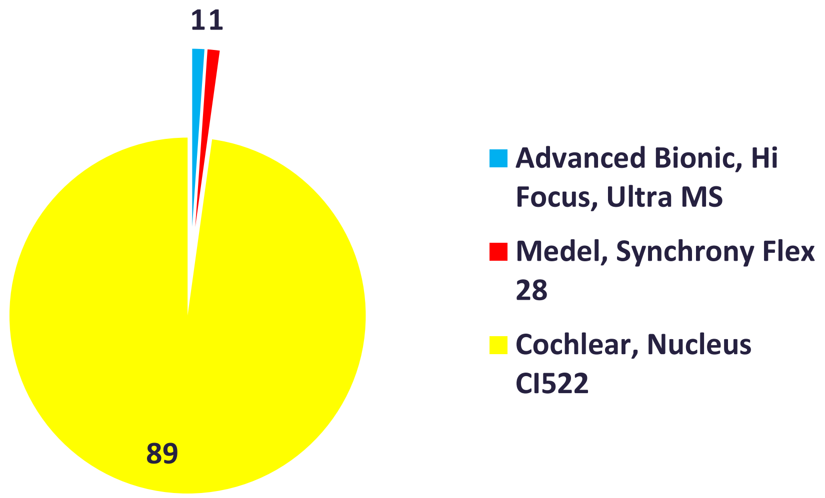


Figure 12: Breakdown of internal implants for children (age 0-17 years) implanted in 2018-2019

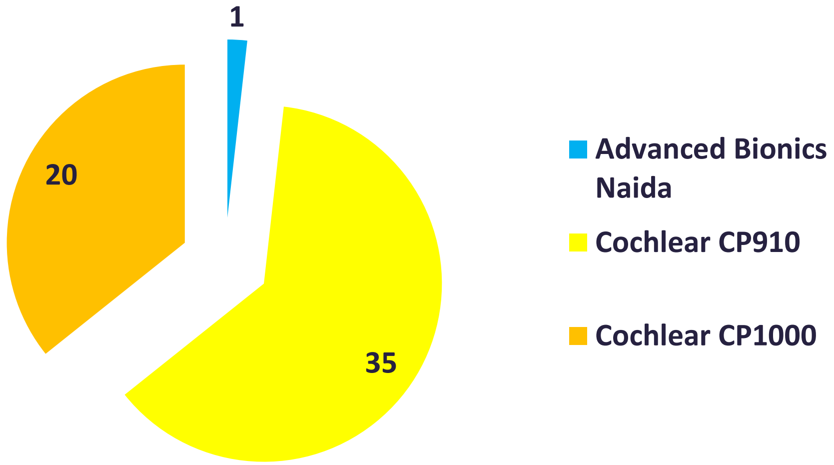


Figure 13: External devices for children (age 0-17 years) newly implanted in 2018-2019 (excluding one Medel reimplant)

Demographics

The age of paediatric cochlear implant patients ranged from 11 months to 9 years and 9 months (average of 3 years and 11 months); for the adolescent programme it ranged from 10 years and 6 months to 17 years and 2 months (average of 13 years and 4 months). Figures 14 and 15 show the age distribution and hearing loss aetiology of the implanted children population during the 2018-2019 financial year period.

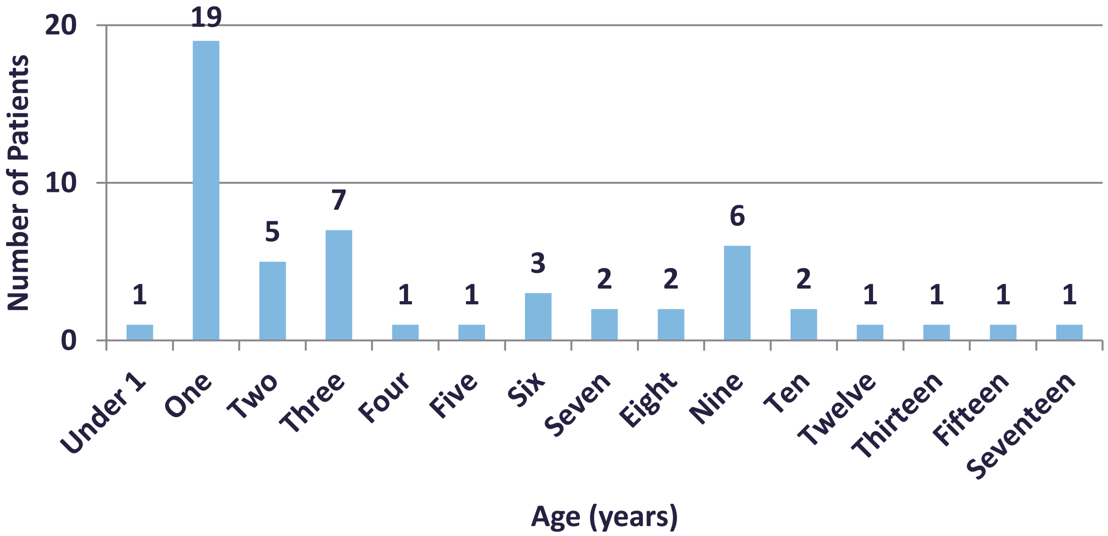


Figure 14: Age distribution of children (age 0-17 years) receiving cochlear implants for the first time (reimplant and sequential patients not included)

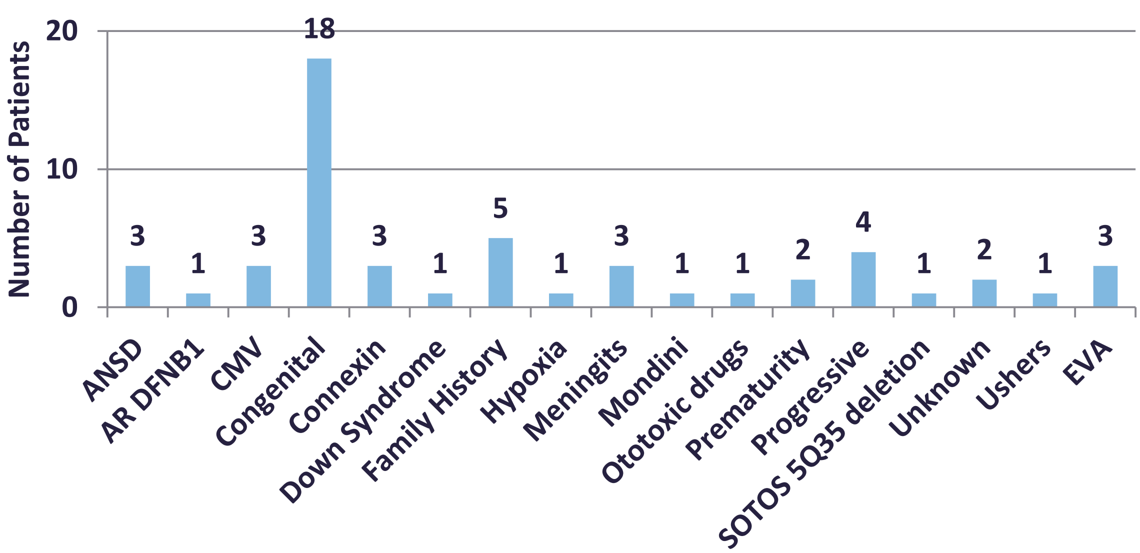


Figure 15: Aetiology of children (age 0-17 years) receiving unilateral or bilateral cochlear implants (reimplant and sequential patients not included)

AR DFNB1 = Autosomal Recessive DFNB1, ANSD = Auditory Neuropathy Spectrum Disorder, CMV = Cytomegalovirus, EVA = enlarged vestibular aqueducts

Outcomes – Implant Use

We carry out the Brief Assessment of Parental Perception (BAPP) after 2 years of implant use. This questionnaire gives the parents perception of their child's implant use and willingness to wear the implant and whether they would recommend a cochlear implant to other parents. It also asks for comparisons in their child's behaviour, contentment, communication learning and getting on with friends pre-implant compared to post-implant. After 2 years of use, 95% of children and adolescents wore their processor(s) all day. The high levels of acceptance and use of the implant by children is seen in figure 16. The majority are very keen to wear the device.

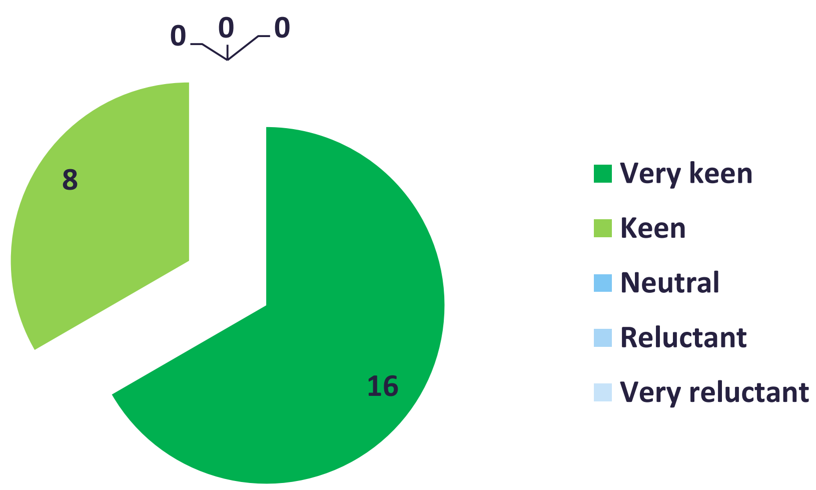


Figure 16: Percentage of paediatric (age 0-10 years) patients' willingness to wear their processor(s) after 2 years of use

One hundred percent of the parents who completed the questionnaire would recommend cochlear implantation to another family in a similar situation.

Outcomes – Aided Levels

The paediatric patients are seen regularly in their first year of implant use to establish good listening levels. We categorize good listening levels to be between 20 and 40 dB HL using sound field testing (warble tone). With some children who have developmental delay it is often not possible to test aided levels. We therefore rely on objective and behavioral testing to establish that the processor is set optimally for the patient. Figure 17 shows the average aided levels achieved 1 year post implant. These levels are also checked at two years of use and remain stable.

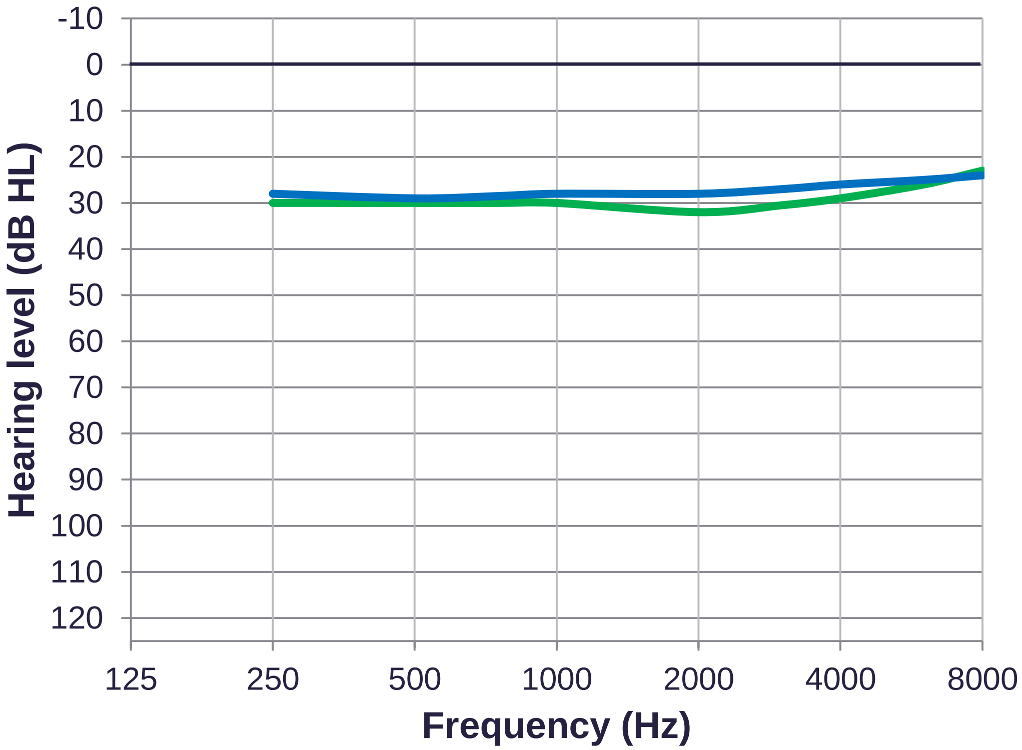


Figure 17: Average aided levels for the first (green) and second year (blue) of implant use for paediatric patients (age 0-10 years)

Post-Implant Support

Children are generally offered regular habilitation sessions during early years of cochlear implant use. These sessions are designed to ensure that the child obtains maximum benefit from the cochlear implant. Therapists work with parents or caregivers to help the child to develop spoken language through listening. Our habilitation programme is based on Auditory Verbal Therapy. Children also have regular appointments for reprogramming of the speech processor.

Over time primary responsibility for a child's habilitation programme is handed back to the local support services. However, the implant team is always available to provide advice, support and training to local professionals if required/requested. Children continue to be seen annually by the cochlear implant team for equipment checks, reprogramming and speech perception assessments.

Outcomes – PLS

The Preschool Language Scales (PLS) are standardised on normally hearing children aged from infancy to 6 years 11 months. The purpose of this assessment is to assess children's receptive and expressive language capabilities. Responses range from parental report to picture selection and completion of open-ended sentences. The high level of contact between the team and children in their first two years of cochlear implant use enables the therapist to pinpoint a child's current level of development. For longer term implant users, reports from parents and local support professionals, together with the child's performance on standardised assessments administered at the annual review, are used to determine their level of attainment on the scale. Figure 18 shows the outcomes of the PLS pre-implant, and at 1 and 2 years of implant use. The data show that the children over time catch up to their chronological age.

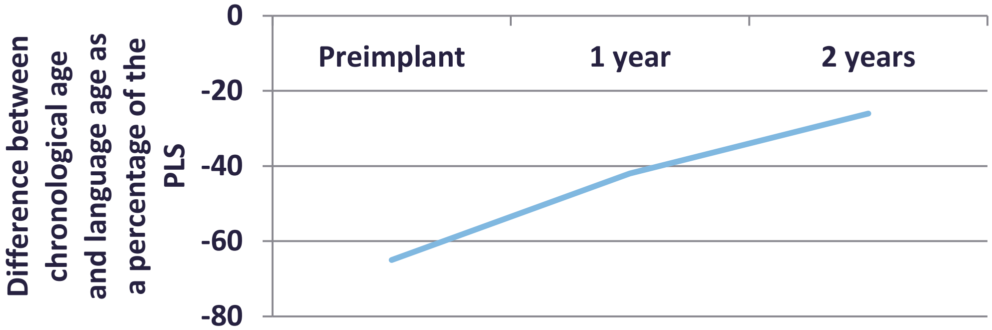


Figure 18: Average difference between chronological age and language age as a percentage for paediatric patients at preimplant and 1 and 2 years post implant use (if at 0 % no difference between chronological age and language score on the PLS) 2018-2019

ADOLESCENT COCHLEAR IMPLANT PROGRAMME

The Manchester adolescent auditory implant programme was established in 1997. It was developed to support our teenage cochlear implant users recognising that they have different needs to our adult or paediatric patients.

As a natural extension of the paediatric programme, the Adolescent programme also offers regular one-to-one intervention and school support while supporting the adolescent's individual needs. The clinical setting is more appropriate for adolescents and the specialised service allows the team to focus on the needs of this unique group.

In addition to those patients referred directly to the adolescent programme, all children who received a cochlear implant on the paediatric cochlear implant programme will transition to the adolescent programme during the summer holidays prior to the start of secondary school. By 18 years of age most of our young people will transition to the adult programme.

In order to help prepare young people for the move to the Adult Service, patients over 16 are offered the opportunity to be seen on their own for appointments, without the presence of their parent or carer. Adolescents can also choose to attend with the support of a family member, friend or partner.

Adolescent outcome data is reported in the paediatric section of this report.

ADULT AUDITORY BRAINSTEM IMPLANT PROGRAMME

Introduction

The implant centre in Manchester has the largest population of Auditory Brainstem Implant (ABI) users in the UK. The majority of these patients have Neurofibromatosis Type 2 (NF2). Manchester is one of only three centres in the UK commissioned to provide ABI's for patients with NF2. For adults, the ABI surgery takes place at Salford Royal NHS Foundation Trust and for children the surgery takes place and the Royal Manchester Children's Hospital. The ABI programming and rehabilitation takes place within the Richard Ramsden Centre for Hearing Implants.

The ABI shown in figure 19 evolved from cochlear implant technology to address the problems of rehabilitating patients with total deafness arising from a damaged or absent cochlear nerve, and who are therefore, unsuitable for cochlear implantation. The great majority of these patients suffer from the genetic disorder called neurofibromatosis type 2 (NF2).

NF2 affects one in 33,000 people and is characterised by the development of bilateral vestibular schwannomas (tumours on the hearing and balance nerves). More recently, other indications for ABI have been approved including cochlear nerve aplasia or severe dysplasia in infants, extreme degrees of inner ear dysplasia even in the presence of normal looking auditory nerves, severe cochlear obliteration from otosclerosis or meningitis, and head injury with cochlear nerve avulsion. These conditions prevent effective cochlear implantation.

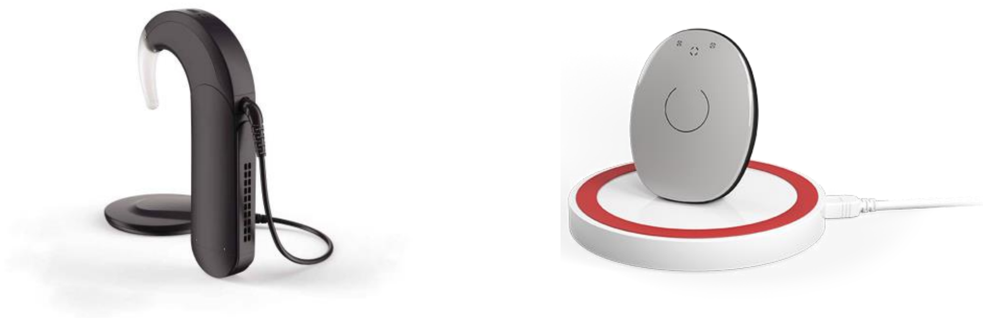


Figure 19: External speech processor options

The ABI stimulates the cochlear nucleus complex on the brainstem directly and bypasses any damaged or absent cochlear nerve. The ABI electrode array is placed on the surface of the cochlear nucleus complex on the floor of the foramen of Luschka in the lateral recess of the fourth ventricle of the brainstem (see figure 20).

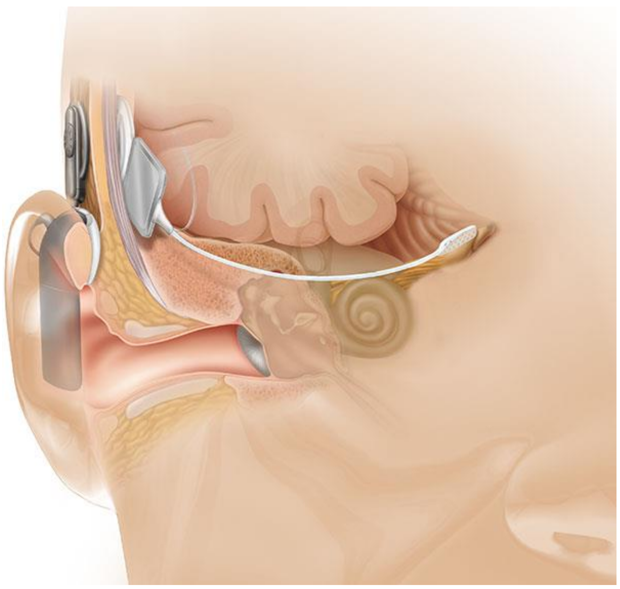


Figure 20: Placement position of the auditory brainstem implant

The external speech processor for an ABI is activated about 6 weeks post-surgery and patients undertake a similar programme of tuning and rehabilitation to cochlear implant patients. The ABI provides limited speech understanding for patients although it can help patients to understand speech better with lip-reading (see figure 21). It also helps patients to hear and identify everyday sounds.

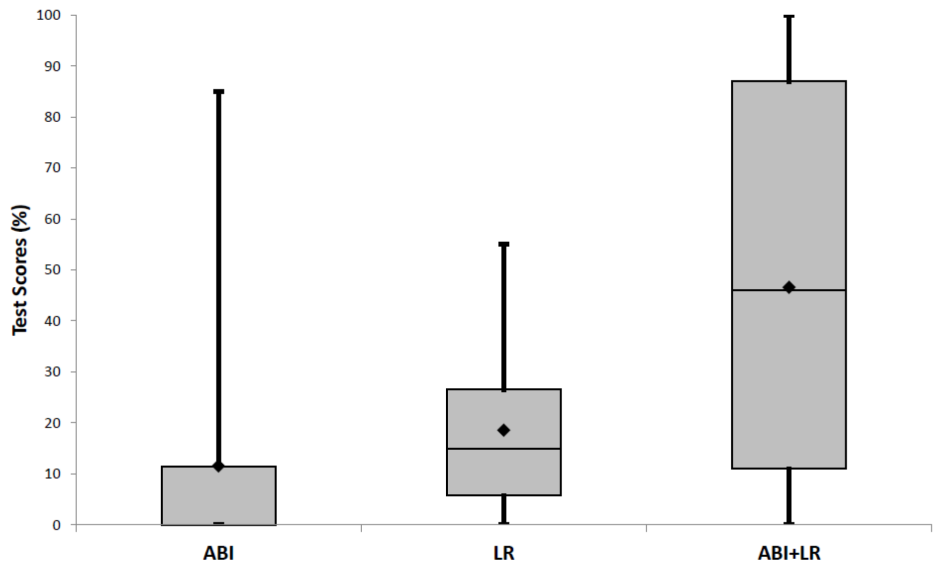


Figure 21: Comparison of CUNY scores (N = 49) using the ABI only, lipreading (LR) only and the ABI with lip-reading (Ramsden et al., 2016)

To date, the team has performed 75 ABI surgeries in adults. In the last financial year, 2 adults were implanted with a MED-EL Synchrony ABI (MR compatible) and both patients have chosen a Rondo 2 (off the ear) speech processor.

PAEDIATRIC AUDITORY BRAINSTEM IMPLANT PROGRAMME

Introduction

Manchester is the main UK centre for the provision of paediatric ABIs. This is an option for children who have cochlear nerve aplasia or hypoplasia, or those who have obliterated cochleas for whom cochlear implantation is not an option. An ABI can provide children with a sensation of sound by directly stimulating the cochlear nucleus in the brainstem. Children undergo a programme of auditory rehabilitation similar to that of our cochlear implant recipients. However, the benefit and sound perceived with an ABI is not equivalent to that of a cochlear implant and outcomes can be variable.

Currently the Manchester programme supports 16 children with ABIs. Two children have received bilateral devices resulting in a total of 18 ABIs. Ten devices were implanted in Manchester and 8 devices were implanted in Verona, Italy. Three devices are currently not being used.

Criteria for referral to the Paediatric ABI Programme

ABI are considered for children with hypoplastic or absent cochlea nerves or severe cochlea ossification. Due to the complexity of programming ABIs, we only recommend ABIs to children who are developmentally able to perform behavioural audiological testing. Generally referrals are from paediatric cochlear implant centres who have children with diagnosed cochlear nerve aplasia or hypoplasia. As with cochlear implants, we only accept referral for children who are aged 5 years or younger.

Clinical activity between April 2018 and March 2019

During the financial year 2018 to 2019 we have implanted 1 MED-EL ABI device in a child who was aged 1 year 8 months at the time of surgery.

Outcomes: Aided Levels

As with cochlear implantation, aided levels are measured during programming appointments. We are aiming for levels between 20 and 40 dB HL at frequencies 500 to 4000 Hz. The average aided levels measured at the last review for our paediatric patients are shown below in figure 22.

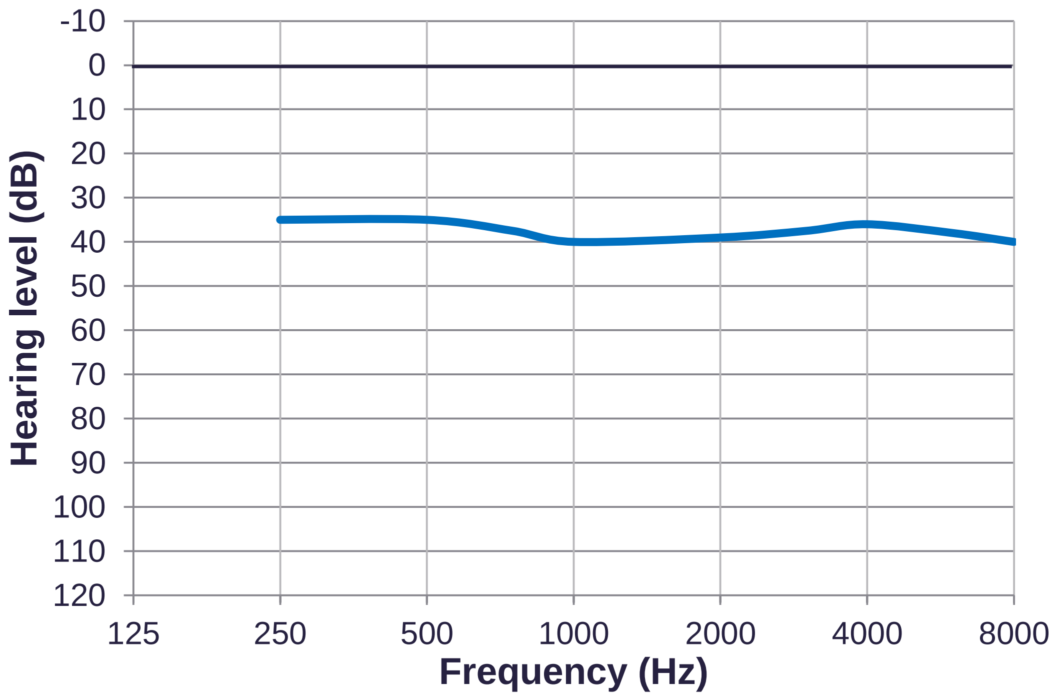


Figure 22: Mean aided thresholds of the paediatric ABI patients at their last review n = 12

Post-implant support

Children are offered regular habilitation sessions. These sessions are designed to ensure that the child obtains as much auditory input as possible. Children also have regular appointments for reprogramming of their processor. Outcomes for auditory brainstem implants can be variable. We measure Categories of Auditory Performance (CAP-II) and Speech Intelligibility Rating (SIR) questionnaires with each of our patients who use their ABIs. CAP is a 10 point scale outcome measure used to assess auditory receptive abilities by a paediatric patient. The 10 categories are outlined in below:

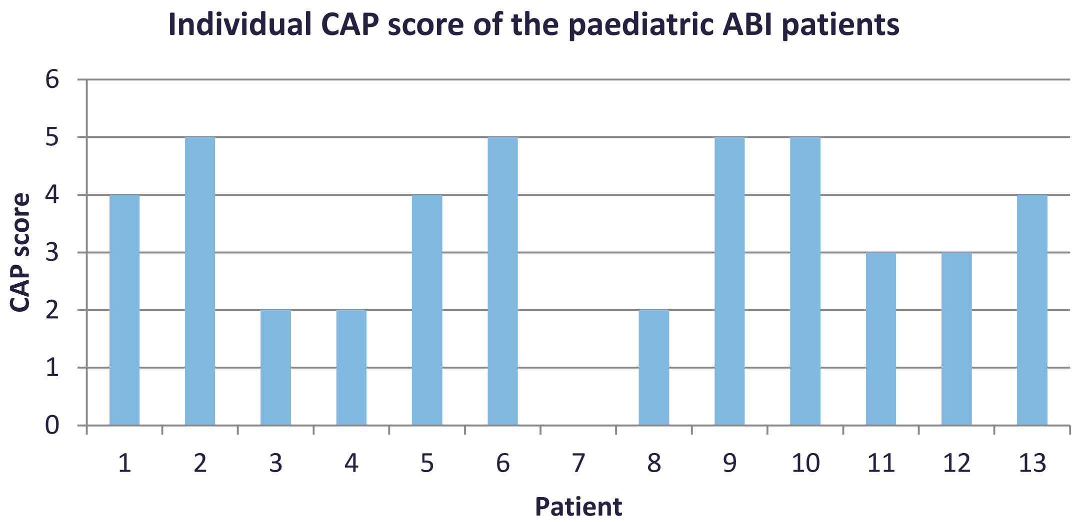
0: No awareness of environmental sounds or voice
1: Awareness of environmental sounds
2: Responds to speech sounds
3: Identification of environmental sounds
4: Discrimination of speech sounds without lip reading
5: Understanding of common phrases without lip reading
6: Understanding of conversation without lip reading
7: Use of telephone with known speaker
8: Follows group conversation in a reverberant room or where there is some interfering noise, such a classroom or restaurant
9: Use of telephone with an unknown speaker in unpredictable context

The SIR has 5 categories which grow in complexity and the clinician applies the category which best fits the patients spoken language abilities. The categories can be seen in the table below.

Category	**Category notes**
1	Connected speech is unintelligible. Pre-recognisable words in spoken language.
2	Connected speech is unintelligible. Intelligible speech is developing in single words when context and lipreading clues are available.
3	Connected speech is intelligible to a listener who concentrates and lipreads.
4	Connected speech is intelligible to a listener who has little experience of a deaf person’s speech.
5	Connected speech is intelligible to all listeners. Child is understood easily in everyday contexts.

The average scores for our paediatric ABI patients on both the CAP and the SIR can be seen below in figure 23 a) and b). Generally patients are able to discriminate some speech sounds without lip reading with their ABIs and have some speech although intelligibility may be poor.

a)



b)

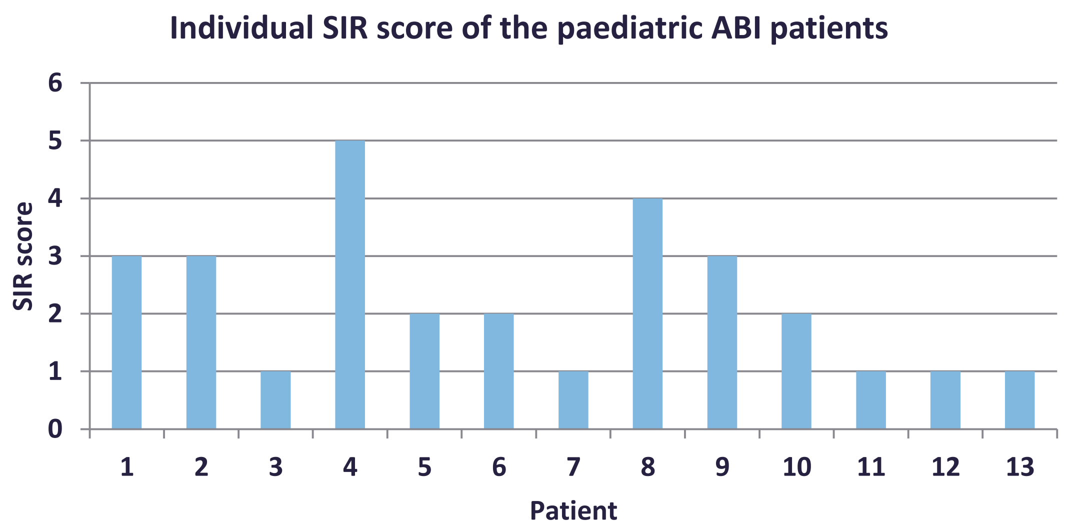


Figure 23 a and b: Individual CAP (2a) and SIR (2b) scores of the paediatric ABI patients at their last review

MEDIA & PUBLIC RELATIONS

Breaking the Silence

In November 2016, Channel 4 broadcasted an observational documentary LIVE from the Richard Ramsden Centre for Hearing Implants entitled "Breaking the Silence". The programme allowed viewers to share the moment eight patients heard for the first time when their cochlear implant was switched on. Staff and patients from the Manchester implant centre as well as other centers from around the UK (see picture 24), were involved in this ground breaking documentary.

Picture 24: Some of the clinicians involved in the live broadcast programme

This documentary can be viewed online in the following link:
https://www.channel4.com/programmes/breaking-the-silence-live/on-demand/63119-002

Following the live broadcast, our Head of Department, Martin O'Driscoll, appeared on the BBC Breakfast TV programme to talk about the benefits of cochlear implantation.

Picture 25: Martin O'Driscoll (right) at the BBC One Breakfast show

Commissioning of Auditory Brainstem Implants for Children

Pioneering brain surgery that allows children who are deaf to experience the sensation of hearing for the first time is being made routinely available, NHS England announced in April 2019.

Two highly specialist teams at hospitals in Manchester and London will perform Auditory Brainstem Implants (ABIs) surgery for children who are deaf across the country.

The surgery is for children who are profoundly deaf, aged five or under, who are unable to use conventional hearing aids or implants because their inner ear (cochlea) or auditory nerve did not develop properly.

The highly complex procedure involves inserting a device directly into the brain to stimulate hearing pathways, bypassing the cochlea and auditory nerve that have not developed properly.

Professor Stephen Powis, National Medical Director of NHS England, said: "*This truly life-changing surgery, which allows youngsters to hear their parents' voices for the first* *time, will now be available across England for children who are deaf who have no other options. As we put the NHS Long Term Plan into practice, the health service will continue to make the very latest, innovative treatments, like this, available to patients across the country along with world class care.*"

After the implant has been inserted, long-term support is crucial to help children learn to listen and understand new signals from their implant. This may be as simple as recognising their own name being called, but it may also involve understanding simple phrases.

Manchester University NHS Foundation Trust and Guy's and St Thomas' NHS Foundation Trust in London will offer the cutting-edge surgery.

The national service is being led by neurosurgeon, Mr Scott Rutherford, from Manchester University NHS Foundation Trust, and Professor Dan Jiang, from Guys and St Thomas' NHS Foundation Trust, who will work with a dedicated team of highly specialised surgeons, audiologists and speech and language therapists.

Mr Scott Rutherford, neurosurgeon with the Manchester University Foundation Trust team, said: "*Manchester University NHS Foundation Trust is delighted to be chosen as one of only two centres in the UK to offer auditory brainstem implants as a treatment for children born without hearing nerves. A commitment by NHS England to fund the service for children will secure its future and allow more families to benefit from our clinical expertise.*"

It is estimated that about 15 children per year would be assessed for auditory brainstem implantation and that about nine would go on to have the surgery, which costs around £60,000 per patient.

A few children have already been able to benefit from this pioneering surgery including four-year-old Theo Sankson, from Manchester, and seven-year-old Leia

Armitage, from Dagenham, who have even started to speak after having the pioneering procedure.

The full article can be viewed using the following link:
https://www.england.nhs.uk/2019/04/nhs-england-to-fund-pioneering-new-brain-surgery-for-children-who-are-deaf/

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https://en-gb.facebook.com/mftcochlearimplants/

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