

USEFUL REPORTS FOR ADULT ADVOCACY WORK

Research summary prepared by Brian Lamb. If you have any suggestions for further research summaries please let me know at (brian@ciicanet.org).

Cost Effectiveness of CI's.

The cost-effectiveness of unilateral cochlear implants in UK adults. Henry Cutler, CIICA Mutsa Gumbie, Emma Olin, Bonny Parkinson, Ross Bowman, Hafsa Quadri, Timothy Mann. The European Journal of Health Economics. <https://doi.org/10.1007/s10198-021-01393-y>

The National Institute for Health and Care Excellence (NICE) updated its eligibility criteria for unilateral cochlear implants (UCIs) in 2019 following a review to extend candidacy to more people. NICE assumed that this would not impact the cost-effectiveness results used in its 2009 technology appraisal guidance. The authors questioned this claim as not proven. They therefore set out to estimate the cost-effectiveness estimates of UCIs in UK adults with severe to profound hearing loss within the current National Health Service.

They developed a clinical pathway model to estimate resource use. Health-related quality of life, potential adverse events, device upgrades and device failure were considered using a Markov model. They found that a Unilateral CI (UCI) is likely to be deemed cost-effective when compared to a hearing aid (£11,946/QALY) or no hearing aid (£10,499/QALY). A UCI has an 93.0% and 98.7% likelihood of being cost-effective within the UK adult population when compared to a hearing aid or no hearing aid, respectively. ICERs were mostly sensitive to the proportion of people eligible for cochlear implant, discount rate, surgery and device costs and processor upgrade cost.

They concluded that "UCIs remain cost-effective despite changes to clinical practice and increased healthcare unit costs." They also estimated that "Updating the NICE criteria to provide better access UCIs is projected to increase annual implants in adults and children by 70% and expenditure by £28.6 million within three years. This increased access to UCIs will further improve quality of life of recipients and overall social welfare."

Implications for Policy

This study demonstrates for the UK context that CI's remain cost effective despite increases in some areas of cost since the previous evaluation. This adds to the growing literature about the cost effectiveness of CI's in high income countries as noted in the recent WHO World Report on Hearing. It also provides important support for extending criteria for access to CI's. Given that Covid has disrupted Adult take up of CI's it is now questionable if these estimates of increased provision will be realised at the moment. The UK example is important as the NICE guidelines have a continuing impact on other countries approaches to candidacy.

Benefits of Bilateral CI

Single-centre experience and practical considerations of the benefit of a second cochlear implant in bilaterally deaf adults. Dominik Péus, Andreas Pfuger, Sophia Marie Häussler, Stefen Knopke, Manuel Christoph Ketterer, Agnieszka J. Szczeppek, Stefan Gräbel, Heidi Olze. European Archives of Oto-Rhino-Laryngology (2021) 278:2289–2296

<https://doi.org/10.1007/s00405-020-06315-x>

There is continued debate about the additional benefit of bilateral cochlear implant (CI). Yet bilateral implantation is increasingly used in the auditory rehabilitation of bilaterally deafened adults.

The authors wanted to investigate the extra benefit of a second CI in adults in terms of health-related quality of life, tinnitus, stress, anxiety, depression, quality of hearing, and speech recognition. The research on a prospective patient cohort administered validated questionnaires before a CI, after a first CI and after a second CI implantation. The study was of 29 patients, made up of nine women and 20 men. The median time between the first and the second implantation was 23 months. The mean total Nijmegen Cochlear Implantation Questionnaire and the Tinnitus Questionnaire score before a CI improved significantly after both implantations. Stress, anxiety, and depression were stable over time and were not significantly affected by CI implantation. Speech recognition with noise significantly improved after the first and again after the second CI. Correlation analysis showed a strong connection between auditory performance and HRQoL.

The authors therefore concluded that “We demonstrated that a unilateral CI benefitted many fields and that the second sequential CI leads again to additional improvement. Bilateral CI implantation should, therefore, be the standard form of auditory rehabilitation in deafened adults.” Further that “A bilateral CI implantation should be encouraged in most cases as a standard form of auditory rehabilitation in deafened children and adults—with very few exceptions.”

Implications for Policy.

This is further evidence of the effectiveness of Bilateral Implantation improving and number of facets of quality of life and supports the continuing call for this to become the standard of care.

Take up of CI's.

Yael Henkin, Yisgav Shapira & Yifat Yaar Soffer (2021): Current demographic and auditory profiles of adult cochlear implant candidates and factors affecting uptake, International Journal of Audiology, DOI: 10.1080/14992027.2021.1941327

The authors noted that despite growth of CI and widening of implantation criteria, take up remains low and the clinical profile of adult CI candidates has not substantially changed. They therefore evaluated the demographic and auditory profiles of current adult CI candidates and identified factors affecting CI uptake. Preoperative data from patients who underwent CI candidacy evaluation between 2016–2018 were retrospectively reviewed. Evidence included demographics, medical reports, audiological results, and reasons for not pursuing implantation. Comparisons between candidates who pursued implantation and those who did not were undertaken.

There were ninety-five candidates (54 females), with an average age of 52 years who were assessed but only forty-nine candidates were implanted. The main reason for not pursuing a CI was candidates' reluctance. Candidates that did have a CI were mostly younger females. They found that age was the only significant predictor of CI uptake.

The authors concluded that "our results indicated that patient-driven factors were the main barriers in the majority of cases (74%) and included uncertainties, beliefs, fears from surgery, HA benefit, lack of motivation, health problems, personal issues, and negative effect of word of mouth. External influences such as HMO-related bureaucracy and attitude of non-CI professionals were barriers in 17%" They also note that "the major barriers to implantation are modifiable and should be kept in mind when developing updated protocols for CI candidacy evaluation and consultation to promote higher compliance.... Some of these factors are within the control of CI teams and can be addressed through periodic follow-up and re-counselling. Clinicians should promote a personalised candidacy process, with special attention to older, male candidates while highlighting the detrimental effects of non-optimal rehabilitation on auditory, cognitive, and social function."

Redmann AJ, Tawfik K, Hammer T, et al. Determining treatment choices after the cochlear implant evaluation process. *Laryngoscope Investigative Otolaryngology*. 2021;6:320–324.

<https://doi.org/10.1002/liv.2.546>

The authors wanted to examine the proportion of patients starting the cochlear implant evaluation (CIE) process proceeding to cochlear implantation in their service and to assess which patient factors affect the decision to proceed with cochlear implantation. They looked retrospectively at a case series of all patients scheduled for a CIE within a tertiary academic neurology practice between January 1, 2014 and April 30, 2016. They found an overall implantation rate of 47% (107/226) among patients scheduled for CIE. The common reasons for deferring CI among candidates included failure to show up for preoperative appointment (24%), choosing hearing aids as an alternative (22%), patient refusal (21%) and insurance issues (17%). Overall, CIE led to a new adjunctive hearing device (CI or hearing aid) in 113 (113/203, 56%) cases.

Patients who chose not to have a CI despite meeting candidacy criteria did so due to cost/insurance issues, or due to preference for auditory amplification rather than CI. The authors also looked to improving the assessment process to ensure that candidates could undertake an assessment without a full CI assessment.

Implications for Policy

These two studies both show the importance of examining the varying barriers for greater CI uptake and that these need addressing as part of any approach to increasing access to CI. Personalisation, addressing patient concerns, fears of surgery, negative comments from others all need addressing. We already know that the reasons for not proceeding with a CI, even when assessment criteria have been met, are complex but it is concerning to see that cost still remains a factor in systems which rely on insurance provision rather than state funding in both studies.

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Jan 2022