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E-HEALTH

Remote Check as a tele-health instrument for cochlear implant recipients: Analysis of impact and feasibility of application

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Abstract

- The number of cochlear implant (CI) surgeries is growing over time, with the risk of overloading CI centers in the post-surgical management. Telemedicine is a possible solution to address this phenomenon. Remote Check (RC) is an application that is specific for CI recipients monitoring. The aim of this study is to evaluate the feasibility of application, potential economic impact and patients' acceptance of RC.
- The population in composed of 66 consecutive patients current in follow up at the ENT unit of the Padova University Hospital
- The study is a retrospective investigation of data on clinical and audiological features (from remote and on-site evaluation), and satisfaction surveys. Data about the time and costs of the evaluations were also collected.
- 190 RC sessions were completed by the patients (2.88 sessions per patient). RC and on-site audiometry significantly correlated except for the 500 Hz frequency. Estimated costs for the Italian National Health System for RC review and on-site evaluations were 1.32€ and 3.49€ per minute, respectively. High satisfaction for RC was reached in 91 % of patients.

Results

Resource	Cost per minute/unit cost (€)	
On-site evaluation		Follow-up visit with Cochlear™ Remote Check
Nurse	0.41	–
Audiologist	0.39	–
Physician	1.07	1.07
Soundproof booth	0.04	–
Computer	0.25	0.25
Audiometer	1.16	–
Otoscope	0.02	–
Headphone	0.01	–
Speculum	0.07	–
Gloves	0.07	–
Total	3.49	1.32

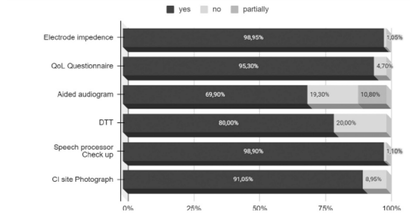
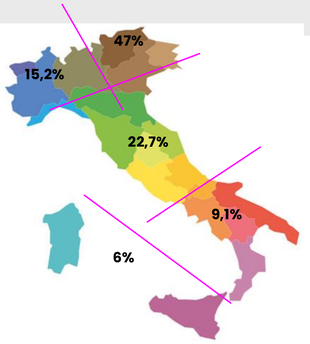
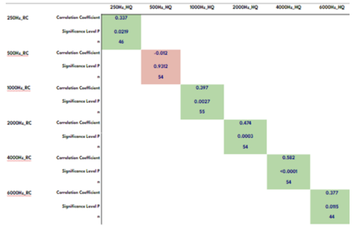


Fig. 2. Analysis of completion of remote check tasks.





Objective

1. To assess the usage of Remote Check as a tele-health instrument
2. To compare in-site audiometric test with those performed with the Remote Check system
3. To assess the possible difference in terms of economic costs of a tele-health visit compared to an in-site visit

Conclusion

- Remote Check seems to be a reliable and customizable tool, making it possible to detect critical issues concerning CI usage, integrity and functionality of the CI processor and internal part and to decide how to manage them.
- It was found to be a cost-saving alternative for the clinical follow-up of CI recipients and this should be considered in daily clinical practice.
- It was well accepted by the patients and their families with high levels of satisfaction and confidence in future developments.

Methods and Materials

- 66 CI patients who underwent activation at least 12 months before
- 3 groups:

→16 Babies (< 7 years)
→15 Bambini (7-12 years)
→35 Adulti (> 12 years

28 Bilateral CI, 38 Unilateral CI = **94 CI**
Follow up every 6 months: **190 Remote Check Sessions**

References

- Sorrentino, F., Cazzador, D., Gazzola, F., Cassarà, A., Ariano, M., Colombo, A., Franchella, S., Trevisi, P., de Filippis, C., Marioni, G., Zanoletti, E., & Brotto, D. (2024). Remote Check as a tele-health instrument for cochlear implant recipients: Analysis of impact and feasibility of application. *American journal of otolaryngology*, *45*(4), 104294. https://doi.org/10.1016/j.amjoto.2024.104294

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