

BACKGROUND

Continued utilization rates of full-time cochlear implant use by young adults who were implanted as children has been reported by several authors in the literature [1,2]. A common report in these studies is that only a percentage of those implanted were queried to determine utilization rates. Many subjects are reported as being lost to follow up. Consequently, percentage of continued use is only available for subjects who can be successfully tracked. The percentage of and factors contributing to patients who are lost to follow-up are not widely reported. Additionally, strategies to reduce lost to follow-up rates have not been provided. It was the purpose of this study to examine cochlear implant patient adherence to post-implant care recommendations to include annual follow-up appointments for both Otolaryngology and Audiology.

METHODS

We received IRB approval through UCSD and RCHSD to investigate reasons for lost to follow up at our center. We retrospectively examined patient appointment data for patients implanted between the years of 1998-July 2021 for a total of 503 patients. Our center counsels patients preoperatively about the lifetime commitment of cochlear implantation and recommends annual appointments for otolaryngology and audiology once a child has reached stability in their implant process. Any child who had not been seen within the past 12 months was designated lost to follow-up. Contact was initiated via MyChart (email from our medical record system) and by phone for all the patients regardless of the duration of the loss to follow up.

RESULTS

Of the 503 patients seen, they were identified as being in one of nine broad categories:

Category	# / % of Patients
Current Patient Otolaryngology & Audiology	137 (27.4%)
Current Patient Audiology/Lost to FU Otolaryngology	117 (23.3%)
Lost to FU by both Otolaryngology & Audiology	89 (17.7%)
Moved	59 (11.7%)
Insurance change	58 (11.5%)
Followed elsewhere	29 (5.8%)
Current Patient Otolaryngology/Lost to FU Audiology	9 (1.8%)
Deceased	4 (0.8%)

For the 89 patients who were lost to follow up for both Otolaryngology and Audiology, the duration of loss ranged from 7 months to 24 years for Audiology and from 1 year to 19 years for Otolaryngology.

Lost to Follow-up by both Otolaryngology and Audiology	# / % of Patients
Non-User/Inconsistent User	21 (23.6%)
Insurance/Finance	5 (5.6%)
Seen Elsewhere	3 (3.4%)
Moved	5 (5.6%)
Did not believe they needed a return visit	6 (6.7%)
COVID Precautions	2 (2.2%)
Could Not Reach	47 (52.8%)

For the nine patients who had been seen by Otolaryngology but not followed up with Audiology, the loss to follow up for Audiology ranged from 14 months to 13 years.

Current Patient Otolaryngology/Lost to Follow-up Audiology	# / % of Patients
Non-User/Inconsistent User	2 (22.2%)
Insurance/Finance	1 (11.1%)
Did not believe they needed a return visit	3 (33.3%)
Could Not Reach	3 (33.3%)

DISCUSSION

For two of our lost to follow-up groups, of the patients for whom we were able to initiate response, 23/98 or 4.6% of the total were lost to follow-up due to being a non or inconsistent user of their cochlear implants. Consequently, when longitudinal studies report utilization rates but have patients for whom they do not have data, it is possible that the reported rates are higher than is actually taking place. Additionally, the fact that a patient has moved or has different insurance does not preclude that they might also be non-users.

CONCLUSION

When looking at loss to follow-up rates, it is important to identify potential barriers to returning care. Established cochlear implant users still may need assistance with adherence to follow-up recommendations.

REFERENCES

1. Ganeka HV, Fenessa ML, Gouding G, Liberman GM, Steel MM, Ruderman LA, Papsin BC, Cushing SL & Gordon KA. A survey of pediatric cochlear implant recipients as young adults. *International Journal of Pediatric Otolaryngology* 2020; May; (132: 109902. .
2. Uziel AS, Sillon M, Vieu A, Artieres F, Piron JP, Daures JP, Mondain M. Ten-year follow-up of a consecutive series of children with multichannel cochlear implants. *Otol Neurotol*. 2007 Aug;28(5):615-28.